

TCLP Extraction Worksheet

Digestion Set Number: 14-041

TCLP Extraction Date: 6-9-14

Scientist(s): ES LS MP TP

Bench #	62144	62145	62152	62157	62158	
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Preliminary Evaluations

% Solids	100	100	100	100	100	
Particle Reduction?	No	No	No	No	No	
Subsample Weight (g)	5.11	5.15	5.03	5.23	5.10	
Initial pH	11	11	11	12	11	
pH after HCL & Heat	10	—	—	—	—	
Extraction Fluid	# 2	# 2	# 2	# 2	# 2	

Tumbling Process

Sample Weight (g)	100.25	100.09	100.09	100.04	100.12	
Ext. Fluid Weight (g)	2005	2002	2002	2001	2002	
Start Time	1500	1500	1500	1500	1500	
Vent?	No	No	No	No	No	
End Time	0930	0930	0930	0930	0930	
Total Hours	18	18	18	18	18	

Filtration

Extract pH	6	7	7	6	7	
Volume Filtered (ml)	50	50	50	50	150	
Preserved?	No	No	No	No	No	
Date Digested	6-10-14	6-10-14	6-10-14	6-10-14	6-10-14	

Comments 10-15 min power failure during Tumbling process

Metals Digestion Worksheet

Digestion Set Number 14-041

Date Digested 6-10-14

Scientist ES

Sample Type:

Water	Sediment	Fish	Other
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TCLP Extract

Digestion Method	200.2	3050	245.1	Other
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Bench# / Analysis

62144	Na	Mg	Al	K	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Ag	Cd	Ba	Hg	Pb	Other
62145	Na	Mg	Al	K	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Ag	Cd	Ba	Hg	Pb	Other
62152	Na	Mg	Al	K	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Ag	Cd	Ba	Hg	Pb	Other
62157	Na	Mg	Al	K	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Ag	Cd	Ba	Hg	Pb	Other
62158	Na	Mg	Al	K	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Ag	Cd	Ba	Hg	Pb	Other
62158MS	Na	Mg	Al	K	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Ag	Cd	Ba	Hg	Pb	Other
62158MSD	Na	Mg	Al	K	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Ag	Cd	Ba	Hg	Pb	Other
	Na	Mg	Al	K	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Ag	Cd	Ba	Hg	Pb	Other
	Na	Mg	Al	K	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Ag	Cd	Ba	Hg	Pb	Other
	Na	Mg	Al	K	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Ag	Cd	Ba	Hg	Pb	Other

Volume

Bench #	62144	62145	62152	62157	62158	62158MS	62158MSD			
Initial Volume: g(ml)	50	50	50	50	50	50	50			
Final Volume: ml	50	50	50	50	50	50	50			

Quality Control

	LRB	LFB	LLFB	QCS/CRM	Matrix Spike
Spike Standard	N/A	500 µl of SCP	—	—	500 µl of SCP
Spike Conc.	—	100 ppb	—	—	100 ppb

Digestion

Digestion Tube Lot #	Hot Block Temperature	Start Time	End Time
1312222	95°C	1000	1630

Comments

Charge Code

ANALYSIS CHECKLIST

Run Date: 6-11-14

Analyst: ES

ANALYTES

Ag Al As Ba Cd Cr Cu Fe Mn Ni Pb Se Zn

Other: _____

QC RESULTS

QC Parameter	Included?	Within Limits?
CCB	✓	✓
LRB	✓	✓
LFB	✓	✓
Matrix Spike (LFM1)	✓	Cr - High Cd - 00R
Matrix Spike Dup (LFMDUP)	✓	Cd - 00R

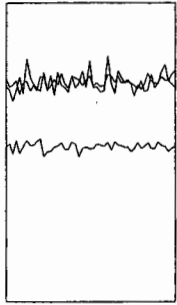
Analyte	QCS True Value	QCS Obtained Value	Within Limits?
ICV			
Cr	100	98.2	✓
Cd	100	99.1	✓
Pb	100	105.8	✓
SCP			
Cr	100	100.3	✓
Cd	100	95.7	✓
Pb	100	102.0	✓

SAMPLES ANALYZED

62144		
62145		
62152		
62157		
62158		
62158 MS		
62158 MSD		

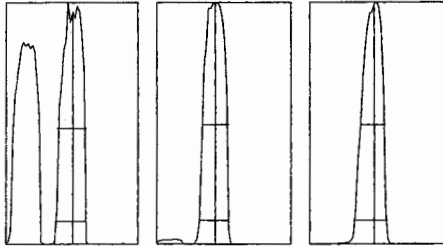
Tune Report

Tune File : nogas.u
Comment : 6-11-14



m/z	Range	Count	Mean	RSD%	Background
7	2,000	1554.0	1475.7	4.43	8.70
89	10,000	7172.0	7350.3	2.29	12.10
205	10,000	5216.0	5209.2	2.53	30.00

Integration Time: 0.1000 sec
Sampling Period: 0.3100 sec
n: 50
Oxide: 156/140 1.503%
Doubly Charged: 70/140 0.998%



m/z:	7	89	205
Height:	1,476	7,602	5,296
Axis:	7.05	88.85	204.95
W-50%:	0.65	0.60	0.55
W-10%:	0.700	0.6500	0.7500

Integration Time: 0.1000 sec
Acquisition Time: 22.7600 sec
Y axis : Linear

===Plasma Condition===

RF Power : 1550 W
RF Matching : 1.8 V
Smpl Depth : 8 mm
Torch-H : -0.9 mm
Torch-V : -0.1 mm
Carrier Gas : 0.75 L/min
Dilution Mode : OFF
Makeup Gas : 0.1 L/min
Optional Gas : --- %
Nebulizer Pump : 0.1 rps
Sample Pump : --- rps
S/C Temp : 2 degC

===Ion Lenses===

Extract 1 : 0 V
Extract 2 : -190 V
Omega Bias : -80 V
Omega Lens : 11 V
Cell Entrance : -40 V
Cell Exit : -60 V
Deflect : 14.4 V
Plate Bias : -40 V
Octopole Parameters:
OctP RF : 190 V
OctP Bias : -8 V

===Q-Pole Parameters===

AMU Gain : 139
AMU Offset : 128
Axis Gain : 1.0013
Axis Offset : 0.04
QP Bias : -3 V

===Detector Parameters===

Discriminator : 4.5 mV
Analog HV : 1838 V
Pulse HV : 1556 V

===Reaction Cell===

Reaction Mode : OFF
H2 Gas : --- mL/min
He Gas : 0 mL/min
Optional Gas : --- %

Tune File : he.u

He Gas: 4.3 mL/min
Optional Gas: --- %
Cell Exit: -60 V
OctP Bias: -18 V
QP Bias: -15 V

m/z	Count (Mean)	RSD%	Integration Time: 0.1000sec
51	0.7	119.18	
59	783.5	4.41	
89	622.9	4.82	

P/A Factor Tuning Report

Acquired: Jun 11 2014 10:49 am

Mass [amu]	Element	P/A Factor
45	Sc	0.129404
52	Cr	0.136316
53	Cr	0.133653
89	Y	0.145682
111	Cd	0.155930
114	Cd	0.156689
115	In	0.155812
118	(In)	Sensitivity too low
159	Tb	0.160714
165	Ho	0.161939
206	(Pb)	0.167219
207	(Pb)	0.167333
208	Pb	0.168188
209	Bi	0.167301

===Detector Parameters===

Discriminator: 4.5 mV
Analog HV: 1838 V
Pulse HV: 1556 V

D:\ICPMH\1\7500\qctune.d

QC Tune Report

Data File: D:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 11 Jun 2014 10:55:27 am
Operator:
Misc Info:
Vial Number: 0
Current Method: D:\ICPMH\1\METHODS\TN6020.m

Minimum Response(CPS)

Element	Actual	Required	Flag
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RSD (%)

Element	Actual	Required	Flag
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7 Li	0.67	5.00	
59 Co	1.98	5.00	
115 In	1.10	5.00	
205 Tl	1.40	5.00	

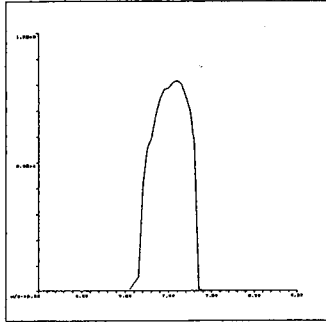
Ion Ratio

Element	Actual	Required	Flag
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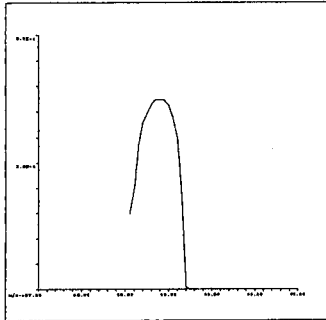
Maximum Bkg. Count(CPS)

Element	Actual	Required	Flag
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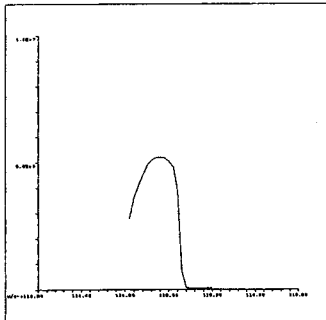
D:\ICPMH\1\7500\qctune.d



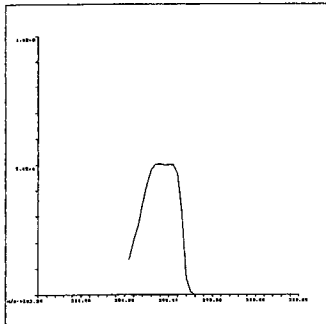
7 Li
Mass Calib.
Actual: 7.05
Required: 6.90-7.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



59 Co
Mass Calib.
Actual: 58.90
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



115 In
Mass Calib.
Actual: 114.90
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.55
Required: 0.75
Flag:



205 Tl
Mass Calib.
Actual: 204.95
Required: 204.90-205.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

QC Tune Result:Pass

D:\ICPMH\1\7500\qctune.d

Calibration Blank Report

Sample Name Cal blank
DataPath D:\ICPMH\1\DATA\6-11-14.b
Type CalBlk
Dilution 1

Data File Name 001CALB.D
AcqDate 6/11/2014 11:04
VialNumber 1101
Comment

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Cr	52	45	1	465	4.77
Cd	111	115	2	65	13.21
Pb	208	209	2	2823	1.07

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD
Sc	45	1	59814	1.66
Sc	45	2	3015091	0.31
Y	89	1	423799	2.13
Y	89	2	5074932	0.86
In	115	1	577783	1.75
In	115	2	4881173	0.64
Tb	159	2	6551374	0.29
Ho	165	2	6275769	0.71
Bi	209	1	1785135	1.89
Bi	209	2	4131671	0.77

TuneStep	TuneFile
1	he.u
2	nogas.u

Calibration Blank Report

Sample Name Cal blank
DataPath D:\ICPMH\1\DATA\6-11-14.b
Type CalBlk
Dilution 1

Data File Name 002CALB.D
AcqDate 6/11/2014 11:10
VialNumber 1101
Comment

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Cr	52	45	1	372	7.82
Cd	111	115	2	49	8.33
Pb	208	209	2	2526	3.52

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD
Sc	45	1	63346	0.05
Sc	45	2	3007346	0.77
Y	89	1	453732	0.50
Y	89	2	5049727	0.98
In	115	1	614532	0.38
In	115	2	4893959	1.03
Tb	159	2	6583498	0.43
Ho	165	2	6284037	0.83
Bi	209	1	1851385	0.88
Bi	209	2	4142959	0.79

TuneStep	TuneFile
1	he.u
2	nogas.u

Calibration Standard Report

Sample Name	0.5 ppb	Data File Name	001CALS.D
DataPath	D:\ICPMH\1\DATA\6-11-14.b	AcqDate	6/11/2014 11:17
Type	CalStd	VialNumber	1102
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Cr	52	45	1	2286	3.69
Cd	111	115	2	3051	1.61
Pb	208	209	2	21044	2.26

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	64598	1.39	63346	102.0	60	125	
Sc	45	2	3007497	1.29	3007346	100.0	60	125	
Y	89	1	457577	1.99	453732	100.8	60	125	
Y	89	2	5098192	1.10	5049727	101.0	60	125	
In	115	1	618927	1.46	614532	100.7	60	125	
In	115	2	4918691	1.25	4893959	100.5	60	125	
Tb	159	2	6643948	1.15	6583498	100.9	60	125	
Ho	165	2	6360878	1.35	6284037	101.2	60	125	
Bi	209	1	1869436	1.22	1851385	101.0	60	125	
Bi	209	2	4170886	1.24	4142959	100.7	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Calibration Standard Report

Sample Name	1.0 ppb	Data File Name	002CAL.S.D
DataPath	D:\ICPMH\1\DATA\6-11-14.b	AcqDate	6/11/2014 11:24
Type	CalStd	VialNumber	1103
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Cr	52	45	1	4334	0.97
Cd	111	115	2	6026	0.62
Pb	208	209	2	38526	1.89

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	64632	1.12	63346	102.0	60	125	
Sc	45	2	3027177	1.42	3007346	100.7	60	125	
Y	89	1	459866	0.47	453732	101.4	60	125	
Y	89	2	5113889	0.67	5049727	101.3	60	125	
In	115	1	619045	0.71	614532	100.7	60	125	
In	115	2	4971437	0.21	4893959	101.6	60	125	
Tb	159	2	6736041	1.06	6583498	102.3	60	125	
Ho	165	2	6420479	1.04	6284037	102.2	60	125	
Bi	209	1	1881244	0.45	1851385	101.6	60	125	
Bi	209	2	4216691	0.21	4142959	101.8	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Calibration Standard Report

Sample Name	10 ppb	Data File Name	003CALS.D
DataPath	D:\ICPMH\1\DATA\6-11-14.b	AcqDate	6/11/2014 11:31
Type	CalStd	VialNumber	1104
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Cr	52	45	1	40124	0.05
Cd	111	115	2	59135	0.42
Pb	208	209	2	357716	0.20

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	64151	1.35	63346	101.3	60	125	
Sc	45	2	3014147	1.45	3007346	100.2	60	125	
Y	89	1	453265	0.67	453732	99.9	60	125	
Y	89	2	5095601	1.40	5049727	100.9	60	125	
In	115	1	613151	0.94	614532	99.8	60	125	
In	115	2	4903103	0.69	4893959	100.2	60	125	
Tb	159	2	6655749	0.46	6583498	101.1	60	125	
Ho	165	2	6375641	0.82	6284037	101.5	60	125	
Bi	209	1	1856712	0.20	1851385	100.3	60	125	
Bi	209	2	4202774	1.07	4142959	101.4	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Calibration Standard Report

Sample Name	100 ppb	Data File Name	004CAL.S.D
DataPath	D:\JCPMH\1\DATA\6-11-14.b	AcqDate	6/11/2014 11:37
Type	CalStd	VialNumber	1105
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Cr	52	45	1	402431	0.17
Cd	111	115	2	594506	0.36
Pb	208	209	2	3606226	0.63

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	64234	0.58	63346	101.4	60	125	
Sc	45	2	3011062	2.13	3007346	100.1	60	125	
Y	89	1	453941	0.23	453732	100.0	60	125	
Y	89	2	5106142	1.98	5049727	101.1	60	125	
In	115	1	615198	0.38	614532	100.1	60	125	
In	115	2	4960120	2.03	4893959	101.4	60	125	
Tb	159	2	6676871	1.92	6583498	101.4	60	125	
Ho	165	2	6417055	1.32	6284037	102.1	60	125	
Bi	209	1	1881679	0.22	1851385	101.6	60	125	
Bi	209	2	4284225	1.66	4142959	103.4	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Calibration Standard Report

Sample Name	200 ppb	Data File Name	005CALS.D
DataPath	D:\ICPMH\1\DATA\6-11-14.b	AcqDate	6/11/2014 11:44
Type	CalStd	VialNumber	1106
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Cr	52	45	1	802535	0.26
Cd	111	115	2	1184039	0.48
Pb	208	209	2	7141172	0.46

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	65321	3.18	63346	103.1	60	125	
Sc	45	2	3000072	0.20	3007346	99.8	60	125	
Y	89	1	457574	3.29	453732	100.8	60	125	
Y	89	2	5092969	0.30	5049727	100.9	60	125	
In	115	1	618416	2.88	614532	100.6	60	125	
In	115	2	4950147	0.41	4893959	101.1	60	125	
Tb	159	2	6661327	0.79	6583498	101.2	60	125	
Ho	165	2	6348704	0.16	6284037	101.0	60	125	
Bi	209	1	1913753	3.17	1851385	103.4	60	125	
Bi	209	2	4290978	0.07	4142959	103.6	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Calibration Standard Report

Sample Name	500 ppb	Data File Name	006CAL.S.D
DataPath	D:\ICPMH\1\DATA\6-11-14.b	AcqDate	6/11/2014 11:51
Type	CalStd	VialNumber	1107
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Cr	52	45	1	2047671	0.78
Cd	111	115	2	3064394	0.56
Pb	208	209	2	17890131	0.45

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	65551	1.37	63346	103.5	60	125	
Sc	45	2	3037474	0.25	3007346	101.0	60	125	
Y	89	1	462289	0.57	453732	101.9	60	125	
Y	89	2	5121233	0.29	5049727	101.4	60	125	
In	115	1	622384	0.71	614532	101.3	60	125	
In	115	2	4955748	1.02	4893959	101.3	60	125	
Tb	159	2	6659324	0.24	6583498	101.2	60	125	
Ho	165	2	6391998	0.83	6284037	101.7	60	125	
Bi	209	1	1930572	0.15	1851385	104.3	60	125	
Bi	209	2	4336347	0.68	4142959	104.7	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Sample Report

Sample Name	rinse	Data File Name	001SMPL.D
DataPath	D:\ICPMH\1\DATA\6-11-14.b	AcqDate	6/11/2014 11:58
Type	Sample	VialNumber	1303
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D
SamplePassFail	Pass	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	-0.02	-0.02	ppb	450	
Cd	111	115	2	0.00	0.00	ppb	450	
Pb	208	209	2	0.01	0.01	ppb	450	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	68535	1.63	63346	108.2	60	125	
Sc	45	2	3149222	0.32	3007346	104.7	60	125	
Y	89	1	473431	0.00	453732	104.3	60	125	
Y	89	2	5198401	0.48	5049727	102.9	60	125	
In	115	1	639770	0.54	614532	104.1	60	125	
In	115	2	5060957	0.92	4893959	103.4	60	125	
Tb	159	2	6680409	1.05	6583498	101.5	60	125	
Ho	165	2	6386107	1.12	6284037	101.6	60	125	
Bi	209	1	1922501	1.02	1851385	103.8	60	125	
Bi	209	2	4343880	0.56	4142959	104.8	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Continuing Calibration Blank (CCB) - US EPA Method 200.8

Sample Name ICB	Data File Name 002SMPL.D
DataPath D:\ICPMH\1\DATA\6-11-14.b	Acq Date Time 2014-06-11T12:05:08-05:00
Type 2-CCB	VialNumber 1101
Dilution 1	Comment
Operator EScarbrough	ISTDRefDataFileName 002CALB.D
SamplePassFail Pass	ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	Units	QC High	QC Flag
Cr	52	45	1	0.00	ppb	1.1	
Cd	111	115	2	0.01	ppb	1.1	
Pb	208	209	2	0.01	ppb	1.1	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	62595	6.64	63346	98.8	60	125	
Sc	45	2	2899457	4.20	3007346	96.4	60	125	
Y	89	1	438198	6.50	453732	96.6	60	125	
Y	89	2	4865192	4.35	5049727	96.3	60	125	
In	115	1	590396	6.22	614532	96.1	60	125	
In	115	2	4717917	4.12	4893959	96.4	60	125	
Tb	159	2	6373556	5.06	6583498	96.8	60	125	
Ho	165	2	6112443	4.12	6284037	97.3	60	125	
Bi	209	1	1784726	6.07	1851385	96.4	60	125	
Bi	209	2	4037759	2.49	4142959	97.5	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

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Sample Report

Sample Name	0.5 ppb (LLICV)	Data File Name	003SMPL.D
DataPath	D:\ICPMH\1\DATA\6-11-14.b	AcqDate	6/11/2014 12:11
Type	Sample	VialNumber	1102
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D
SamplePassFail	Pass	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	0.48	0.48	ppb	450	
Cd	111	115	2	0.50	0.50	ppb	450	
Pb	208	209	2	0.53	0.53	ppb	450	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	64969	0.72	63346	102.6	60	125	
Sc	45	2	3038137	1.12	3007346	101.0	60	125	
Y	89	1	455519	0.29	453732	100.4	60	125	
Y	89	2	5093351	0.55	5049727	100.9	60	125	
In	115	1	611039	0.64	614532	99.4	60	125	
In	115	2	4963762	0.49	4893959	101.4	60	125	
Tb	159	2	6719879	0.88	6583498	102.1	60	125	
Ho	165	2	6400956	0.50	6284037	101.9	60	125	
Bi	209	1	1856948	0.35	1851385	100.3	60	125	
Bi	209	2	4243836	0.14	4142959	102.4	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

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(6)

Continuing Calibration Verification (CCV) - US EPA Method 200.8

Sample Name ICV
DataPathName D:\ICPMH\1\DATA\6-11-14.b
Type 2-CCV
Dilution 1
Operator EScarborough
SamplePassFail Pass

Data File Name 004SMPL.D
AcqDate 6/11/2014 12:18
VialNumber 1105
Comment
ISTD Ref File 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	TuneStep	Meas Value	Units	ExpValue	%Rec	QC1 Low	QC1 High	QC2 Low	QC2 High	QC Flag
Cr	52	45	1	98.24	ppb	100	98.2	85	115	90	110	
Cd	111	115	2	99.12	ppb	100	99.1	85	115	90	110	
Pb	208	209	2	105.77	ppb	100	105.8	85	115	90	110	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Rec	Lower Limit	Upper Limit	QC Flag
Sc	45	1	66511	1.43	63346	105.0	60	125	
Sc	45	2	3015886	1.42	3007346	100.3	60	125	
Y	89	1	463243	2.36	453732	102.1	60	125	
Y	89	2	5075765	0.99	5049727	100.5	60	125	
In	115	1	622505	2.23	614532	101.3	60	125	
In	115	2	4910531	1.80	4893959	100.3	60	125	
Tb	159	2	6616022	0.93	6583498	100.5	60	125	
Ho	165	2	6363149	0.93	6284037	101.3	60	125	
Bi	209	1	1899032	1.93	1851385	102.6	60	125	
Bi	209	2	4189425	1.34	4142959	101.1	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

6-11-14
⑤

Continuing Calibration Verification (CCV) - US EPA Method 200.8

Sample Name SCP Science (100)
DataPathName D:\ICPMH\1\DATA\6-11-14.b
Type 2-CCV
Dilution 1
Operator EScarborough
SamplePassFail Pass

Data File Name 005SMPL.D
AcqDate 6/11/2014 12:25
VialNumber 1301
Comment
ISTD Ref File 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	TuneStep	Meas Value	Units	ExpValue	%Rec	QC1 Low	QC1 High	QC2 Low	QC2 High	QC Flag
Cr	52	45	1	100.27	ppb	100	100.3	85	115	90	110	
Cd	111	115	2	95.72	ppb	100	95.7	85	115	90	110	
Pb	208	209	2	101.95	ppb	100	102.0	85	115	90	110	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Rec	Lower Limit	Upper Limit	QC Flag
Sc	45	1	63394	0.28	63346	100.1	60	125	
Sc	45	2	2996411	0.47	3007346	99.6	60	125	
Y	89	1	447538	0.27	453732	98.6	60	125	
Y	89	2	5085096	1.08	5049727	100.7	60	125	
In	115	1	601883	1.03	614532	97.9	60	125	
In	115	2	4923330	0.73	4893959	100.6	60	125	
Tb	159	2	6695359	0.55	6583498	101.7	60	125	
Ho	165	2	6421199	1.81	6284037	102.2	60	125	
Bi	209	1	1876328	0.80	1851385	101.3	60	125	
Bi	209	2	4295826	0.45	4142959	103.7	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

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(5)

Sample Report

Sample Name	QPod Element	Data File Name	006SMPL.D
DataPath	D:\ICPMH\1\DATA\6-11-14.b	AcqDate	6/11/2014 12:32
Type	Sample	VialNumber	2401
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D
SamplePassFail	Fail	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	-0.03	-0.03	ppb	450	
Cd	111	115	2	0.00	0.00	ppb	450	
Pb	208	209	2	0.01	0.01	ppb	450	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	66528	4.14	63346	105.0	60	125	
Sc	45	2	3135497	0.61	3007346	104.3	60	125	
Y	89	1	465267	3.45	453732	102.5	60	125	
Y	89	2	5224916	0.24	5049727	103.5	60	125	
In	115	1	604472	7.76	614532	98.4	60	125	
In	115	2	4978657	0.70	4893959	101.7	60	125	
Tb	159	2	6725161	0.79	6583498	102.2	60	125	
Ho	165	2	6438537	0.15	6284037	102.5	60	125	
Bi	209	1	843788	7.47	1851385	45.6	60	125	IS Fail
Bi	209	2	2355229	1.41	4142959	56.8	60	125	IS Fail

TuneStep	TuneFile
1	he.u
2	nogas.u

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(5)

Laboratory Reagent Blank (LRB) - US EPA Method 200.8

Sample Name	LRB	Data File Name	007SMPL.D
DataPath	D:\JCPMH\1\DATA\6-11-14.b	AcqDate	6/11/2014 12:39
Type	2-LRB	VialNumber	2101
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D
SamplePassFail	Pass	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	Units	QC High	QC Flag
Cr	52	45	1	-0.01	ppb	1.1	
Cd	111	115	2	0.01	ppb	1.1	
Pb	208	209	2	0.03	ppb	1.1	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	65740	0.12	63346	103.8	60	125	
Sc	45	2	3033972	0.29	3007346	100.9	60	125	
Y	89	1	456552	0.30	453732	100.6	60	125	
Y	89	2	5148929	0.80	5049727	102.0	60	125	
In	115	1	612799	0.64	614532	99.7	60	125	
In	115	2	4940284	0.28	4893959	100.9	60	125	
Tb	159	2	6696586	0.72	6583498	101.7	60	125	
Ho	165	2	6431074	0.56	6284037	102.3	60	125	
Bi	209	1	1914300	0.24	1851385	103.4	60	125	
Bi	209	2	4367940	0.37	4142959	105.4	60	125	

TuneStep	TuneFile	TuneDate
1	he.u	6/11/2014 12:37:00 PM
2	nogas.u	6/11/2014 12:37:00 PM

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Laboratory Fortified Blank (LFB) - US EPA Method 200.8

Sample Name	LFB	Data File Name	008SMPL.D
DataPath	D:\ICPMH\1\DATA\6-11-14.b	AcqDate	6/11/2014 12:45
Type	2-LFB	VialNumber	2102
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D
SamplePassFail	Pass	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Conc.	Units	Spike Amt	%Recovery	%QC Low	%QC High	QC Flag
Cr	52	45	1	99.72	ppb	100	99.7	85	115	
Cd	111	115	2	94.04	ppb	100	94.0	85	115	
Pb	208	209	2	98.28	ppb	100	98.3	85	115	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limiy	Upper Limit	QC Flag
Sc	45	1	64131	1.89	63346	101.2	60	125	
Sc	45	2	3074960	3.57	3007346	102.2	60	125	
Y	89	1	446426	0.55	453732	98.4	60	125	
Y	89	2	5203498	3.51	5049727	103.0	60	125	
In	115	1	599636	0.75	614532	97.6	60	125	
In	115	2	5000434	3.46	4893959	102.2	60	125	
Tb	159	2	6809206	2.68	6583498	103.4	60	125	
Ho	165	2	6516715	2.84	6284037	103.7	60	125	
Bi	209	1	1896324	1.05	1851385	102.4	60	125	
Bi	209	2	4445126	3.26	4142959	107.3	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

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Laboratory Reagent Blank (LRB) - US EPA Method 200.8

Sample Name	TCLP Blank	Data File Name	009SMPL.D
DataPath	D:\ICPMH\1\DATA\6-11-14.b	AcqDate	6/11/2014 12:52
Type	2-LRB	VialNumber	2103
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D
SamplePassFail	Pass	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	Units	QC High	QC Flag
Cr	52	45	1	0.09	ppb	1.1	
Cd	111	115	2	0.02	ppb	1.1	
Pb	208	209	2	0.07	ppb	1.1	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	63889	7.14	63346	100.9	60	125	
Sc	45	2	3142888	0.81	3007346	104.5	60	125	
Y	89	1	447450	7.24	453732	98.6	60	125	
Y	89	2	5287799	0.62	5049727	104.7	60	125	
In	115	1	597925	6.96	614532	97.3	60	125	
In	115	2	5142290	0.77	4893959	105.1	60	125	
Tb	159	2	6972547	0.60	6583498	105.9	60	125	
Ho	165	2	6687718	0.20	6284037	106.4	60	125	
Bi	209	1	1873218	8.45	1851385	101.2	60	125	
Bi	209	2	4439758	0.48	4142959	107.2	60	125	

TuneStep	TuneFile	TuneDate
1	he.u	6/11/2014 12:50:00 PM
2	nogas.u	6/11/2014 12:50:00 PM

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(B)

Sample Report

Sample Name	aa62144	Data File Name	010SMPL.D
DataPath	D:\ICPMH\1\DATA\6-11-14.b	AcqDate	6/11/2014 12:59
Type	Sample	VialNumber	2104
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D
SamplePassFail	Fail	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	283.27	283.27	ppb	450	
Cd	111	115	2	2616.65	2616.65	ppb	450	>LDR
Pb	208	209	2	29.17	29.17	ppb	450	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	59649	2.99	63346	94.2	60	125	
Sc	45	2	2961515	1.63	3007346	98.5	60	125	
Y	89	1	431861	1.84	453732	95.2	60	125	
Y	89	2	5135990	1.53	5049727	101.7	60	125	
In	115	1	526154	2.17	614532	85.6	60	125	
In	115	2	4428754	1.37	4893959	90.5	60	125	
Tb	159	2	6298607	2.55	6583498	95.7	60	125	
Ho	165	2	6032693	1.97	6284037	96.0	60	125	
Bi	209	1	1544397	2.15	1851385	83.4	60	125	
Bi	209	2	3804718	1.94	4142959	91.8	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Dilute 1:100 + Re-Run (Lithium)

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Sample Report

Sample Name aa62145	Data File Name 011SMPL.D
DataPath D:\ICPMH\1\DATA\6-11-14.b	AcqDate 6/11/2014 13:06
Type Sample	VialNumber 2105
Dilution 1	Comment
Operator EScarbrough	ISTDRefDataFileName 002CALB.D
SamplePassFail Fail	ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	271.96	271.96	ppb	450	
Cd	111	115	2	3212.37	3212.37	ppb	450	>LDR
Pb	208	209	2	22.85	22.85	ppb	450	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	56987	1.66	63346	90.0	60	125	
Sc	45	2	2615006	8.50	3007346	87.0	60	125	
Y	89	1	410688	0.91	453732	90.5	60	125	
Y	89	2	4523757	8.67	5049727	89.6	60	125	
In	115	1	509119	0.85	614532	82.8	60	125	
In	115	2	4027872	9.18	4893959	82.3	60	125	
Tb	159	2	5668141	8.59	6583498	86.1	60	125	
Ho	165	2	5469470	9.12	6284037	87.0	60	125	
Bi	209	1	1466939	0.73	1851385	79.2	60	125	
Bi	209	2	3298080	8.83	4142959	79.6	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Dilute 1:100 + Re-Run (cadmium)

6-11-14
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Sample Report

Sample Name	aa62152	Data File Name	012SMPL.D
DataPath	D:\ICPMH\1\DATA\6-11-14.b	AcqDate	6/11/2014 13:12
Type	Sample	VialNumber	2106
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D
SamplePassFail	Fail	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	330.04	330.04	ppb	450	
Cd	111	115	2	3091.99	3091.99	ppb	450	>LDR
Pb	208	209	2	24.18	24.18	ppb	450	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	50732	1.53	63346	80.1	60	125	
Sc	45	2	2568398	0.70	3007346	85.4	60	125	
Y	89	1	379276	1.47	453732	83.6	60	125	
Y	89	2	4560052	0.83	5049727	90.3	60	125	
In	115	1	478964	1.28	614532	77.9	60	125	
In	115	2	4110448	1.27	4893959	84.0	60	125	
Tb	159	2	5807067	1.53	6583498	88.2	60	125	
Ho	165	2	5581949	1.05	6284037	88.8	60	125	
Bi	209	1	1389607	1.02	1851385	75.1	60	125	
Bi	209	2	3470365	0.57	4142959	83.8	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Dilute 1:100 + Re-Run (Cadmium)

6-11-14
(5)

Sample Report

Sample Name	aa62157	Data File Name	013SMPL.D
DataPath	D:\ICPMH\1\DATA\6-11-14.b	AcqDate	6/11/2014 13:19
Type	Sample	VialNumber	2107
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D
SamplePassFail	Fail	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	314.84	314.84	ppb	450	
Cd	111	115	2	4037.87	4037.87	ppb	450	>LDR
Pb	208	209	2	40.67	40.67	ppb	450	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	44712	5.69	63346	70.6	60	125	
Sc	45	2	2406786	1.10	3007346	80.0	60	125	
Y	89	1	349497	3.74	453732	77.0	60	125	
Y	89	2	4353758	1.37	5049727	86.2	60	125	
In	115	1	438348	3.28	614532	71.3	60	125	
In	115	2	3893846	0.69	4893959	79.6	60	125	
Tb	159	2	5514914	0.95	6583498	83.8	60	125	
Ho	165	2	5322629	1.24	6284037	84.7	60	125	
Bi	209	1	1305683	1.53	1851385	70.5	60	125	
Bi	209	2	3299747	1.50	4142959	79.6	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Dilute 1:100 + Re-Run (Cadmium)

6-11-14
②

All Reference (AllRef) Sample Report

Sample Name aa62158
Data File Name 014SMPL.D
DataPath D:\ICPMH\1\DATA\6-11-14.b
Acq Date Time 2014-06-11T13:25:49-05:00
AcqDate 6/11/2014 13:25
Type AllRef
VialNumber 2108
Dilution 1
Comment
Operator EScarbrough
ISTDRefDataFileName 002CALB.D
SamplePassFail Fail
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	235.22	235.22	ppb	450	
Cd	111	115	2	2641.06	2641.06	ppb	450	>LDR
Pb	208	209	2	14.61	14.61	ppb	450	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	41666	1.57	63346	65.8	60	125	
Sc	45	2	2161917	0.39	3007346	71.9	60	125	
Y	89	1	331412	0.98	453732	73.0	60	125	
Y	89	2	3946643	0.59	5049727	78.2	60	125	
In	115	1	426299	0.21	614532	69.4	60	125	
In	115	2	3626738	0.55	4893959	74.1	60	125	
Tb	159	2	5162396	0.74	6583498	78.4	60	125	
Ho	165	2	4986992	0.58	6284037	79.4	60	125	
Bi	209	1	1264611	0.26	1851385	68.3	60	125	
Bi	209	2	3094505	0.55	4142959	74.7	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Dilute 1:100 + Re-Run (admission)

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Laboratory Fortified Matrix (LFM) Sample Report - US EPA Method 200.8

Sample Name	aa62158 MS	Data File Name	015SMPL.D
DataPath	D:\ICPMH\1\DATA\6-11-14.b	AcqDate	6/11/2014 13:32
Type	2-LFM1	VialNumber	2109
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D
QC Reference DataFile Name	014SMPL.D	SamplePassFail	Fail

QC Analyte Table

Element	m/z	ISTD	Tune Step	Conc.	Ref. Conc.	Units	Spike Amt	%Recovery	%QC Low	%QC High	QC Flag
Cr	52	45	1	362.97	235.22	ppb	100	127.7	75	125	>+-25%
Cd	111	115	2	3201.46	2641.06	ppb	100		75	125	Out of Range
Pb	208	209	2	127.23	14.61	ppb	100	112.6	75	125	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	38412	5.22	63346	60.6	60	125	
Sc	45	2	2015573	2.69	3007346	67.0	60	125	
Y	89	1	309107	4.37	453732	68.1	60	125	
Y	89	2	3663921	3.84	5049727	72.6	60	125	
In	115	1	393739	5.43	614532	64.1	60	125	
In	115	2	3381775	3.53	4893959	69.1	60	125	
Tb	159	2	4839330	3.40	6583498	73.5	60	125	
Ho	165	2	4638892	3.44	6284037	73.8	60	125	
Bi	209	1	1172456	5.10	1851385	63.3	60	125	
Bi	209	2	2860786	3.82	4142959	69.1	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

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⑤

Laboratory Fortified Matrix Duplicate (LFMDup) Sample Report - US EPA 200.8

Sample Name	aa62158 MSD	Data File Name	016SMPL.D
DataPath	D:\ICPMH\1\DATA\6-11-14.b	AcqDate	6/11/2014 13:39
Type	2-LFMDup	VialNumber	2110
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D
QCRefDataFileName	015SMPL.D	SamplePassFail	Fail

QC Analyte Table

Element	m/z	ISTD	Tune Step	Conc.	Ref. Conc	Units	RPD	%QC High	QC Flag
Cr	52	45	1	364.01	362.97	ppb	0.3	20	
Cd	111	115	2	3198.03	3201.46	ppb		20	Out of Range
Pb	208	209	2	128.08	127.23	ppb	0.7	20	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	%Recovery	Reference CPS	Lower Limly	Upper Limit	QC Flag
Sc	45	1	33034	5.40	52.1	63346	60	125	IS Fail
Sc	45	2	1737037	1.47	57.8	3007346	60	125	IS Fail
Y	89	1	275794	4.90	60.8	453732	60	125	
Y	89	2	3171621	1.04	62.8	5049727	60	125	
In	115	1	358537	5.17	58.3	614532	60	125	IS Fail
In	115	2	2982952	0.96	61.0	4893959	60	125	
Tb	159	2	4227353	0.91	64.2	6583498	60	125	
Ho	165	2	4060326	1.42	64.6	6284037	60	125	
Bi	209	1	1084796	5.32	58.6	1851385	60	125	IS Fail
Bi	209	2	2511847	0.56	60.6	4142959	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

6-11-14
⑥

Sample Report

Sample Name	rinse	Data File Name	017SMPL.D
DataPath	D:\ICPMH\1\DATA\6-11-14.b	AcqDate	6/11/2014 13:45
Type	Sample	VialNumber	1303
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D
SamplePassFail	Fail	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	0.02	0.02	ppb	450	
Cd	111	115	2	0.18	0.18	ppb	450	
Pb	208	209	2	-0.02	-0.02	ppb	450	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	32290	4.67	63346	51.0	60	125	IS Fail
Sc	45	2	1528594	0.05	3007346	50.8	60	125	IS Fail
Y	89	1	261891	4.03	453732	57.7	60	125	IS Fail
Y	89	2	2858853	0.33	5049727	56.6	60	125	IS Fail
In	115	1	371725	3.62	614532	60.5	60	125	
In	115	2	2996712	0.56	4893959	61.2	60	125	
Tb	159	2	3928638	0.45	6583498	59.7	60	125	IS Fail
Ho	165	2	3736624	0.19	6284037	59.5	60	125	IS Fail
Bi	209	1	1144053	4.44	1851385	61.8	60	125	
Bi	209	2	2497585	0.46	4142959	60.3	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Continuing Calibration Blank (CCB) - US EPA Method 200.8

Sample Name	CCB	Data File Name	018SMPL.D
DataPath	D:\ICPMH\1\DATA\6-11-14.b	Acq Date Time	2014-06-11T13:52:35-05:00
Type	2-CCB	VialNumber	1101
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D
SamplePassFail	Fail	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	Units	QC High	QC Flag
Cr	52	45	1	0.02	ppb	1.1	
Cd	111	115	2	0.32	ppb	1.1	
Pb	208	209	2	-0.01	ppb	1.1	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	31115	5.20	63346	49.1	60	125	IS Fail
Sc	45	2	1567070	1.05	3007346	52.1	60	125	IS Fail
Y	89	1	252728	4.90	453732	55.7	60	125	IS Fail
Y	89	2	3062606	0.37	5049727	60.6	60	125	
In	115	1	357119	5.46	614532	58.1	60	125	IS Fail
In	115	2	3179741	0.24	4893959	65.0	60	125	
Tb	159	2	4311796	0.24	6583498	65.5	60	125	
Ho	165	2	4099042	0.47	6284037	65.2	60	125	
Bi	209	1	1081784	8.16	1851385	58.4	60	125	IS Fail
Bi	209	2	2670749	0.89	4142959	64.5	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

6-11-14
⑤

Sample Report

Sample Name 0.5 ppb (LLCV)
DataPath D:\ICPMH\1\DATA\6-11-14.b
Type Sample
Dilution 1
Operator EScarbrough
SamplePassFail Fail

Data File Name 019SMPL.D
AcqDate 6/11/2014 13:59
VialNumber 1102
Comment
ISTDRefDataFileName 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	0.56	0.56	ppb	450	
Cd	111	115	2	0.76	0.76	ppb	450	
Pb	208	209	2	0.52	0.52	ppb	450	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	32921	2.62	63346	52.0	60	125	IS Fail
Sc	45	2	1603849	1.40	3007346	53.3	60	125	IS Fail
Y	89	1	266590	2.17	453732	58.8	60	125	IS Fail
Y	89	2	3092579	0.09	5049727	61.2	60	125	
In	115	1	376710	2.42	614532	61.3	60	125	
In	115	2	3216134	1.04	4893959	65.7	60	125	
Tb	159	2	4377579	0.95	6583498	66.5	60	125	
Ho	165	2	4180070	1.36	6284037	66.5	60	125	
Bi	209	1	1182449	2.75	1851385	63.9	60	125	
Bi	209	2	2756962	0.79	4142959	66.5	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

6-11-14
②

Continuing Calibration Verification (CCV) - US EPA Method 200.8

Sample Name CCV
DataPathName D:\ICPMH\1\DATA\6-11-14.b
Type 2-CCV
Dilution 1
Operator EScarbrough
SamplePassFail Fail

Data File Name 020SMPL.D
AcqDate 6/11/2014 14:06
VialNumber 1105
Comment
ISTD Ref File 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	TuneStep	Meas Value	Units	ExpValue	%Rec	QC1 Low	QC1 High	QC2 Low	QC2 High	QC Flag
Cr	52	45	1	100.91	ppb	100	100.9	85	115	90	110	
Cd	111	115	2	93.69	ppb	100	93.7	85	115	90	110	
Pb	208	209	2	103.77	ppb	100	103.8	85	115	90	110	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Rec	Lower Limit	Upper Limit	QC Flag
Sc	45	1	33981	3.11	63346	53.6	60	125	IS Fail
Sc	45	2	1652754	0.50	3007346	55.0	60	125	IS Fail
Y	89	1	274316	1.45	453732	60.5	60	125	
Y	89	2	3190354	0.53	5049727	63.2	60	125	
In	115	1	390574	1.08	614532	63.6	60	125	
In	115	2	3300813	0.51	4893959	67.4	60	125	
Tb	159	2	4486602	0.71	6583498	68.1	60	125	
Ho	165	2	4292436	0.18	6284037	68.3	60	125	
Bi	209	1	1233325	1.63	1851385	66.6	60	125	
Bi	209	2	2875877	0.69	4142959	69.4	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

6-11-14
⑥

Continuing Calibration Verification (CCV) - US EPA Method 200.8

Sample Name SCP Science (100)
DataPathName D:\ICPMH\1\DATA\6-11-14.b
Type 2-CCV
Dilution 1
Operator EScarbrough
SamplePassFail Fail

Data File Name 021SMPL.D
AcqDate 6/11/2014 14:13
VialNumber 1301
Comment
ISTD Ref File 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	TuneStep	Meas Value	Units	ExpValue	%Rec	QC1 Low	QC1 High	QC2 Low	QC2 High	QC Flag
Cr	52	45	1	107.31	ppb	100	107.3	85	115	90	110	
Cd	111	115	2	92.33	ppb	100	92.3	85	115	90	110	
Pb	208	209	2	104.23	ppb	100	104.2	85	115	90	110	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Rec	Lower Limit	Upper Limit	QC Flag
Sc	45	1	32088	8.88	63346	50.7	60	125	IS Fail
Sc	45	2	1663109	0.42	3007346	55.3	60	125	IS Fail
Y	89	1	259343	9.52	453732	57.2	60	125	IS Fail
Y	89	2	3238010	0.23	5049727	64.1	60	125	
In	115	1	367241	10.37	614532	59.8	60	125	IS Fail
In	115	2	3332136	0.48	4893959	68.1	60	125	
Tb	159	2	4573030	0.58	6583498	69.5	60	125	
Ho	165	2	4401113	0.49	6284037	70.0	60	125	
Bi	209	1	1159425	11.20	1851385	62.6	60	125	
Bi	209	2	2865543	0.19	4142959	69.2	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

6-11-14
②

Sample Report

Sample Name	rinse	Data File Name	022SMPL.D
DataPath	D:\ICPMH\1\DATA\6-11-14.b	AcqDate	6/11/2014 14:19
Type	Sample	VialNumber	1303
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D
SamplePassFail	Fail	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	-0.04	-0.04	ppb	450	
Cd	111	115	2	0.04	0.04	ppb	450	
Pb	208	209	2	-0.02	-0.02	ppb	450	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	37066	1.42	63346	58.5	60	125	IS Fail
Sc	45	2	1716944	0.87	3007346	57.1	60	125	IS Fail
Y	89	1	289886	0.71	453732	63.9	60	125	
Y	89	2	3151404	0.72	5049727	62.4	60	125	
In	115	1	409766	0.78	614532	66.7	60	125	
In	115	2	3270048	0.68	4893959	66.8	60	125	
Tb	159	2	4280419	1.06	6583498	65.0	60	125	
Ho	165	2	4059145	0.91	6284037	64.6	60	125	
Bi	209	1	1215151	1.35	1851385	65.6	60	125	
Bi	209	2	2705755	0.55	4142959	65.3	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Sample Report

Sample Name	aa62144 1:100	Data File Name	023SMPL.D
DataPath	D:\ICPMH\1\DATA\6-11-14.b	AcqDate	6/11/2014 14:26
Type	Sample	VialNumber	2201
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D
SamplePassFail	Fail	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	2.87	2.87	ppb	450	
Cd	111	115	2	26.07	26.07	ppb	450	
Pb	208	209	2	0.27	0.27	ppb	450	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	37733	0.69	63346	59.6	60	125	IS Fail
Sc	45	2	1757985	0.39	3007346	58.5	60	125	IS Fail
Y	89	1	295751	0.77	453732	65.2	60	125	
Y	89	2	3189472	0.26	5049727	63.2	60	125	
In	115	1	418373	1.00	614532	68.1	60	125	
In	115	2	3316031	0.67	4893959	67.8	60	125	
Tb	159	2	4296195	0.33	6583498	65.3	60	125	
Ho	165	2	4082384	0.48	6284037	65.0	60	125	
Bi	209	1	1255959	0.44	1851385	67.8	60	125	
Bi	209	2	2725243	0.55	4142959	65.8	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Cadmium

$$26.07 \times 100 = 2607 = \textcircled{2610}$$

$$MQL = 0.5 \times 100 = 50$$

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(5)

Sample Report

Sample Name	aa62145 1:100	Data File Name	024SMPL.D
DataPath	D:\ICPMH\1\DATA\6-11-14.b	AcqDate	6/11/2014 14:33
Type	Sample	VialNumber	2202
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D
SamplePassFail	Fail	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	2.71	2.71	ppb	450	
Cd	111	115	2	30.02	30.02	ppb	450	
Pb	208	209	2	0.17	0.17	ppb	450	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	39036	0.98	63346	61.6	60	125	
Sc	45	2	1782290	1.11	3007346	59.3	60	125	IS Fail
Y	89	1	301423	0.94	453732	66.4	60	125	
Y	89	2	3247026	0.58	5049727	64.3	60	125	
In	115	1	425824	0.73	614532	69.3	60	125	
In	115	2	3353487	1.04	4893959	68.5	60	125	
Tb	159	2	4338361	0.63	6583498	65.9	60	125	
Ho	165	2	4152955	0.60	6284037	66.1	60	125	
Bi	209	1	1245476	1.13	1851385	67.3	60	125	
Bi	209	2	2871323	3.46	4142959	69.3	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Cadmium

$2.71 \times 100 = 271$ (ES)

$30.02 \times 100 = 3002 = 3000$

$MLL = 0.5 \times 100 = 50$

6-11-14
(ES)

Sample Report

Sample Name aa62152 1:100	Data File Name 025SMPL.D
DataPath D:\ICPMH\1\DATA\6-11-14.b	AcqDate 6/11/2014 14:40
Type Sample	VialNumber 2203
Dilution 1	Comment
Operator EScarbrough	ISTDRefDataFileName 002CALB.D
SamplePassFail Fail	ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	3.18	3.18	ppb	450	
Cd	111	115	2	34.53	34.53	ppb	450	
Pb	208	209	2	0.26	0.26	ppb	450	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	40272	0.69	63346	63.6	60	125	
Sc	45	2	1656510	8.21	3007346	55.1	60	125	IS Fail
Y	89	1	305634	1.60	453732	67.4	60	125	
Y	89	2	2979251	8.63	5049727	59.0	60	125	IS Fail
In	115	1	432352	1.20	614532	70.4	60	125	
In	115	2	3086008	8.40	4893959	63.1	60	125	
Tb	159	2	3978489	8.27	6583498	60.4	60	125	
Ho	165	2	3797642	8.43	6284037	60.4	60	125	
Bi	209	1	1277869	1.39	1851385	69.0	60	125	
Bi	209	2	2438563	12.09	4142959	58.9	60	125	IS Fail

TuneStep	TuneFile
1	he.u
2	nogas.u

Cadmium

$$34.53 \times 100 = 3453 = \textcircled{3450}$$

$$MQL = 0.5 \times 100 = 50$$

6-11-14
ES

Sample Report

Sample Name aa62157 1:100
DataPath D:\ICPMH\1\DATA\6-11-14.b
Type Sample
Dilution 1
Operator EScarbrough
SamplePassFail Pass

Data File Name 026SMPL.D
AcqDate 6/11/2014 14:47
VialNumber 2204
Comment
ISTDRefDataFileName 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	2.98	2.98	ppb	450	
Cd	111	115	2	40.86	40.86	ppb	450	
Pb	208	209	2	0.37	0.37	ppb	450	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	39791	1.04	63346	62.8	60	125	
Sc	45	2	1835196	0.40	3007346	61.0	60	125	
Y	89	1	306937	0.83	453732	67.6	60	125	
Y	89	2	3320997	0.29	5049727	65.8	60	125	
In	115	1	431736	0.41	614532	70.3	60	125	
In	115	2	3410520	0.93	4893959	69.7	60	125	
Tb	159	2	4430890	0.80	6583498	67.3	60	125	
Ho	165	2	4195504	0.19	6284037	66.8	60	125	
Bi	209	1	1285535	0.14	1851385	69.4	60	125	
Bi	209	2	2801234	1.46	4142959	67.6	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Cadmium

$$40.86 \times 100 = 4086 = \textcircled{4090}$$

$$MQL = 0.5 \times 100 = 50$$

6-11-14
⑥

Sample Report

Sample Name aa62158 1:100
DataPath D:\ICPMH\1\DATA\6-11-14.b
Type Sample
Dilution 1
Operator EScarbrough
SamplePassFail Pass

Data File Name 027SMPL.D
AcqDate 6/11/2014 14:54
VialNumber 2205
Comment
ISTDRefDataFileName 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	Final Concentration	Units	High Value	QC Flag
Cr	52	45	1	2.24	2.24	ppb	450	
Cd	111	115	2	27.28	27.28	ppb	450	
Pb	208	209	2	0.13	0.13	ppb	450	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	40807	1.12	63346	64.4	60	125	
Sc	45	2	1856700	0.71	3007346	61.7	60	125	
Y	89	1	311961	0.45	453732	68.8	60	125	
Y	89	2	3340711	0.58	5049727	66.2	60	125	
In	115	1	436126	0.65	614532	71.0	60	125	
In	115	2	3423505	0.06	4893959	70.0	60	125	
Tb	159	2	4446959	0.27	6583498	67.5	60	125	
Ho	165	2	4234303	1.17	6284037	67.4	60	125	
Bi	209	1	1293419	0.73	1851385	69.9	60	125	
Bi	209	2	2809212	0.45	4142959	67.8	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Cadmium

$$27.28 \times 100 = 2728 = \textcircled{2730}$$

$$MQL = 0.5 \times 100 = 50$$

6-11-14
(5)

Sample Report

Sample Name	rinse	Data File Name	028SMPL.D
DataPath	D:\ICPMH\1\DATA\6-11-14.b	AcqDate	6/11/2014 15:00
Type	Sample	VialNumber	1303
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D
SamplePassFail	Pass	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	-0.05	-0.05	ppb	450	
Cd	111	115	2	0.02	0.02	ppb	450	
Pb	208	209	2	-0.01	-0.01	ppb	450	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	40401	0.33	63346	63.8	60	125	
Sc	45	2	1850011	0.13	3007346	61.5	60	125	
Y	89	1	312373	1.01	453732	68.8	60	125	
Y	89	2	3315780	0.68	5049727	65.7	60	125	
In	115	1	437298	0.45	614532	71.2	60	125	
In	115	2	3411198	0.64	4893959	69.7	60	125	
Tb	159	2	4406930	0.84	6583498	66.9	60	125	
Ho	165	2	4214235	0.06	6284037	67.1	60	125	
Bi	209	1	1299722	0.70	1851385	70.2	60	125	
Bi	209	2	2793782	0.51	4142959	67.4	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Continuing Calibration Blank (CCB) - US EPA Method 200.8

Sample Name	CCB	Data File Name	029SMPL.D
DataPath	D:\ICPMH\1\DATA\6-11-14.b	Acq Date Time	2014-06-11T15:07:48-05:00
Type	2-CCB	VialNumber	1101
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D
SamplePassFail	Fail	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	Units	QC High	QC Flag
Cr	52	45	1	0.00	ppb	1.1	
Cd	111	115	2	0.10	ppb	1.1	
Pb	208	209	2	-0.01	ppb	1.1	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	37224	0.61	63346	58.8	60	125	IS Fail
Sc	45	2	1759125	1.08	3007346	58.5	60	125	IS Fail
Y	89	1	293408	0.36	453732	64.7	60	125	
Y	89	2	3329320	0.93	5049727	65.9	60	125	
In	115	1	414654	0.02	614532	67.5	60	125	
In	115	2	3426492	1.13	4893959	70.0	60	125	
Tb	159	2	4625732	0.99	6583498	70.3	60	125	
Ho	165	2	4415243	0.52	6284037	70.3	60	125	
Bi	209	1	1238523	1.16	1851385	66.9	60	125	
Bi	209	2	2857530	1.60	4142959	69.0	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

6-11-14
(5)

Sample Report

Sample Name 0.5 ppb (LLCV)
DataPath D:\ICPMH\1\DATA\6-11-14.b
Type Sample
Dilution 1
Operator EScarbrough
SamplePassFail Fail

Data File Name 030SMPL.D
AcqDate 6/11/2014 15:14
VialNumber 1102
Comment
ISTDRefDataFileName 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	0.48	0.48	ppb	450	
Cd	111	115	2	0.57	0.57	ppb	450	
Pb	208	209	2	0.51	0.51	ppb	450	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	37444	1.25	63346	59.1	60	125	IS Fail
Sc	45	2	1805576	0.33	3007346	60.0	60	125	
Y	89	1	296680	0.99	453732	65.4	60	125	
Y	89	2	3428604	0.34	5049727	67.9	60	125	
In	115	1	416088	0.08	614532	67.7	60	125	
In	115	2	3489558	0.37	4893959	71.3	60	125	
Tb	159	2	4758337	0.31	6583498	72.3	60	125	
Ho	165	2	4561428	0.51	6284037	72.6	60	125	
Bi	209	1	1282164	0.47	1851385	69.3	60	125	
Bi	209	2	3001553	0.55	4142959	72.4	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

6-11-14
②

Continuing Calibration Verification (CCV) - US EPA Method 200.8

Sample Name CCV
DataPathName D:\ICPMH\1\DATA\6-11-14.b
Type 2-CCV
Dilution 1
Operator EScarbrough
SamplePassFail Fail

Data File Name 031SMPL.D
AcqDate 6/11/2014 15:21
VialNumber 1105
Comment
ISTD Ref File 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	TuneStep	Meas Value	Units	ExpValue	%Rec	QC1 Low	QC1 High	QC2 Low	QC2 High	QC Flag
Cr	52	45	1	100.77	ppb	100	100.8	85	115	90	110	
Cd	111	115	2	94.49	ppb	100	94.5	85	115	90	110	
Pb	208	209	2	104.53	ppb	100	104.5	85	115	90	110	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Rec	Lower Limit	Upper Limit	QC Flag
Sc	45	1	37868	0.55	63346	59.8	60	125	IS Fail
Sc	45	2	1824018	0.29	3007346	60.7	60	125	
Y	89	1	300497	0.31	453732	66.2	60	125	
Y	89	2	3482475	0.31	5049727	69.0	60	125	
In	115	1	421898	0.48	614532	68.7	60	125	
In	115	2	3554514	0.50	4893959	72.6	60	125	
Tb	159	2	4816404	0.54	6583498	73.2	60	125	
Ho	165	2	4602898	0.59	6284037	73.2	60	125	
Bi	209	1	1336912	3.71	1851385	72.2	60	125	
Bi	209	2	3079966	0.81	4142959	74.3	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

6-11-14
(5)

Continuing Calibration Verification (CCV) - US EPA Method 200.8

Sample Name SCP Science (100)
DataPath Name D:\ICPMH\1\DATA\6-11-14.b
Type 2-CCV
Dilution 1
Operator EScarborough
SamplePassFail Fail

Data File Name 032SMPL.D
AcqDate 6/11/2014 15:28
VialNumber 1301
Comment
ISTD Ref File 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	TuneStep	Meas Value	Units	ExpValue	%Rec	QC1 Low	QC1 High	QC2 Low	QC2 High	QC Flag
Cr	52	45	1	100.51	ppb	100	100.5	85	115	90	110	
Cd	111	115	2	91.99	ppb	100	92.0	85	115	90	110	
Pb	208	209	2	101.60	ppb	100	101.6	85	115	90	110	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Rec	Lower Limit	Upper Limit	QC Flag
Sc	45	1	37382	0.53	63346	59.0	60	125	IS Fail
Sc	45	2	1826082	0.53	3007346	60.7	60	125	
Y	89	1	294736	0.42	453732	65.0	60	125	
Y	89	2	3486135	0.88	5049727	69.0	60	125	
In	115	1	415811	0.57	614532	67.7	60	125	
In	115	2	3582634	0.77	4893959	73.2	60	125	
Tb	159	2	4871308	1.14	6583498	74.0	60	125	
Ho	165	2	4651463	0.58	6284037	74.0	60	125	
Bi	209	1	1300038	0.47	1851385	70.2	60	125	
Bi	209	2	3119568	0.19	4142959	75.3	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

6-11-14
⑤

TCLP Extraction Worksheet

Digestion Set Number: 14-042
 TCLP Extraction Date: ~~6-11-14~~ 6-10-14 (23)
 Scientist(s): ES TS MP TP

Bench #	62146	62147	62148	62149	62150	
---------	-------	-------	-------	-------	-------	--

Preliminary Evaluations

% Solids	100	100	100	100	100	
Particle Reduction?	No	No	No	No	No	
Subsample Weight (g)	5.019	5.03	5.04	5.02	5.03	
Initial pH	11.5	12	12	11.5	11.5	
pH after HCL & Heat	10.5	-	-	-	-	
Extraction Fluid	2	2	2	2	2	

Tumbling Process

Sample Weight (g)	100.04	100.04	100.14	100.08	100.09	
Ext. Fluid Weight (g)	2000	2000	2003	2002	2002	
Start Time	1415	1415	1415	1415	1415	
Vent?	Yes	Yes	Yes	Yes	Yes	
End Time	9:05	9:05	9:05	9:05	9:05	
Total Hours	18.75	18.75	18.75	18.75	18.75	

Filtration

Extract pH	7	7	8	7	7	
Volume Filtered (ml)	150	50	50	50	50	
Preserved?	No	No	No	No	No	
Date Digested	6/11/14	6/11/14	6/11/14	6/11/14	6/11/14	

Comments

Metals Digestion Worksheet

Digestion Set Number 14-042

Date Digested 6-11-14

Scientist MP LS

Sample Type: Water Sediment Fish Other

Digestion Method 200.2 3050 245.1 Other

Bench# / Analysis

62146	Na	Mg	Al	K	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Ag	Cd	Ba	Hg	Pb	Other
62146 MS	Na	Mg	Al	K	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Ag	Cd	Ba	Hg	Pb	Other
62146 MSD	Na	Mg	Al	K	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Ag	Cd	Ba	Hg	Pb	Other
62147	Na	Mg	Al	K	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Ag	Cd	Ba	Hg	Pb	Other
62148	Na	Mg	Al	K	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Ag	Cd	Ba	Hg	Pb	Other
62149	Na	Mg	Al	K	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Ag	Cd	Ba	Hg	Pb	Other
62150	Na	Mg	Al	K	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Ag	Cd	Ba	Hg	Pb	Other
	Na	Mg	Al	K	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Ag	Cd	Ba	Hg	Pb	Other
	Na	Mg	Al	K	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Ag	Cd	Ba	Hg	Pb	Other
	Na	Mg	Al	K	Cr	Mn	Fe	Co	Ni	Cu	Zn	As	Se	Ag	Cd	Ba	Hg	Pb	Other

Volume

Bench #	62146	62146 MS	62146 MSD	62147	62148	62149	62150			
Initial Volume: g/mL	50	50	50	50	50	50	50			
Final Volume: ml	50	50	50	50	50	50	50			

Quality Control

	LRB	LFB	LLFB	QCS/CRM	Matrix Spike
Spike Standard		500 µl SCP			500 µl SCP
Spike Conc.		100 ppb			100 ppb

Digestion

Digestion Tube Lot #	Hot Block Temperature	Start Time	End Time
1312222	95	0930	1530

Comments TCLP

Charge Code

ANALYSIS CHECKLIST

Run Date: 6-12-14

Analyst: ES

ANALYTES

Ag Al As Ba Cd Cr Cu Fe Mn Ni Pb Se Zn

Other: _____

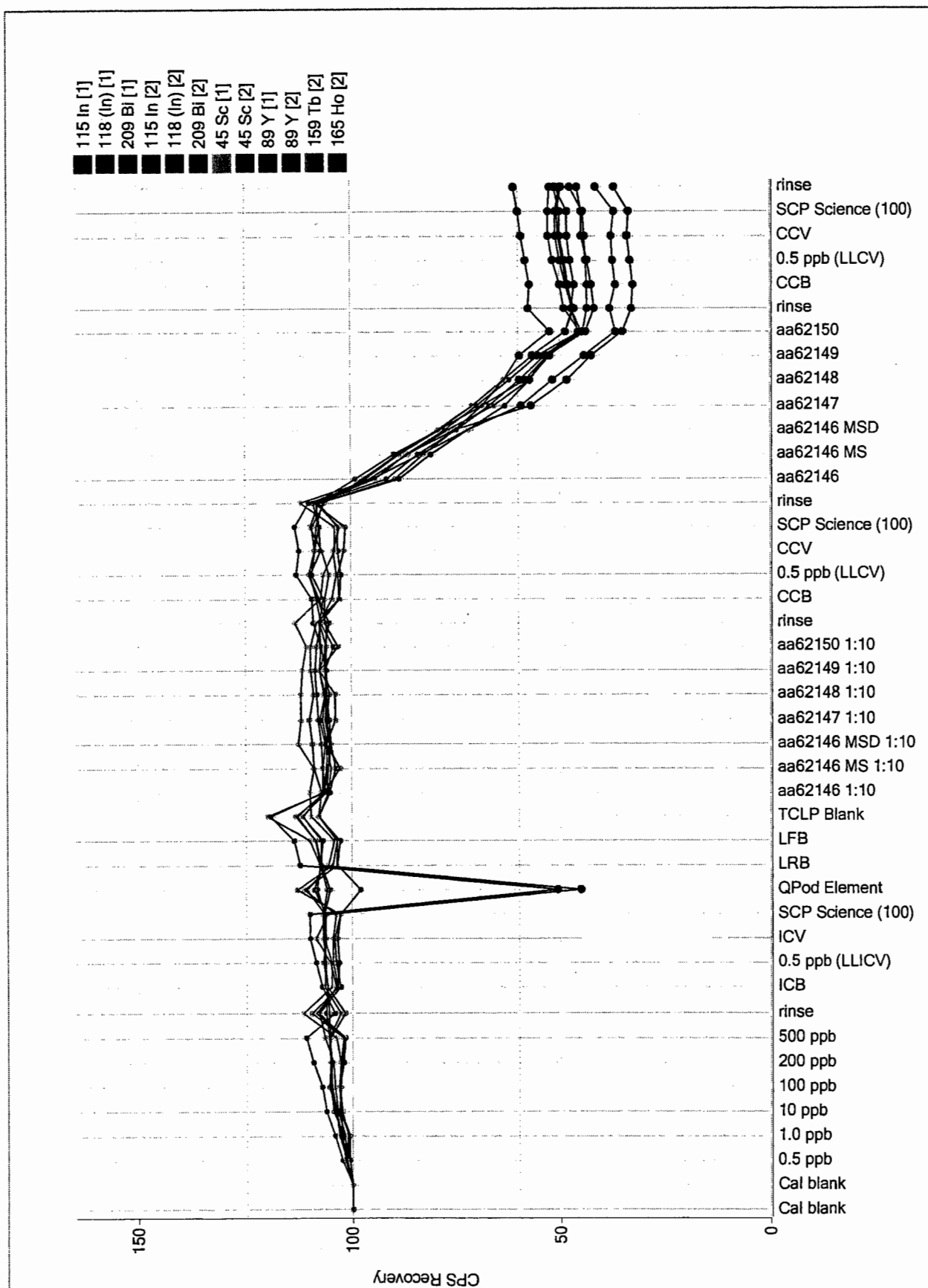
QC RESULTS

QC Parameter	Included?	Within Limits?
CCB	✓	✓
LRB	✓	✓
LFB	✓	✓
Matrix Spike (LFM1)	✓	Cd - High
Matrix Spike Dup (LFMDUP)	✓	✓

Analyte	QCS True Value	QCS Obtained Value	Within Limits?
ICV - Cr	100	94.4	✓
Cd	100	96.3	✓
Pb	100	103.9	✓
SCP - Cr	100	92.6	✓
Cd	100	93.3	✓
Pb	100	101.4	✓
CCV - Cr	100	92.2	✓
Cd	100	94.6	✓
Pb	100	102.8	✓
SCP - Cr	100	94.7	✓
Cd	100	92.9	✓
Pb	100	100.9	✓

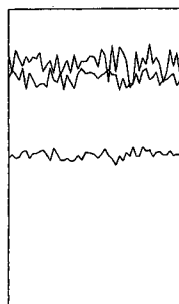
SAMPLES ANALYZED

62146 1:10	62146	
62146 MS 1:10	62146 MS	
62146 MSD 1:10	62146 MSD	
62147 1:10	62147	
62148 1:10	62148	
62149 1:10	62149	
62150 1:10	62150	



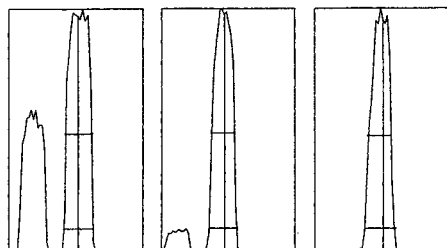
Tune Report

Tune File : nogas.u
 Comment : 6-12-14



m/z	Range	Count	Mean	RSD%	Background
7	1,000	769.0	819.9	4.23	5.10
89	10,000	5133.0	5145.1	2.60	8.20
205	5,000	3800.0	3837.9	2.77	22.40

Integration Time: 0.1000 sec
 Sampling Period: 0.3100 sec
 n: 50
 Oxide: 156/140 1.722%
 Doubly Charged: 70/140 0.937%



m/z:	7	89	205
Height:	802	5,149	3,689
Axis:	7.10	88.95	205.05
W-50%:	0.60	0.55	0.55
W-10%:	0.6500	0.6500	0.700

Integration Time: 0.1000 sec
 Acquisition Time: 22.7600 sec
 Y axis : Linear

===Plasma Condition===

RF Power : 1550 W
 RF Matching : 1.8 V
 Smpl Depth : 8 mm
 Torch-H : -0.7 mm
 Torch-V : 0 mm
 Carrier Gas : 0.75 L/min
 Dilution Mode : OFF
 Makeup Gas : 0.1 L/min
 Optional Gas : --- %
 Nebulizer Pump : 0.1 rps
 Sample Pump : --- rps
 S/C Temp : 2 degC

===Ion Lenses===

Extract 1 : 0 V
 Extract 2 : -170 V
 Omega Bias : -80 V
 Omega Lens : 11.8 V
 Cell Entrance : -40 V
 Cell Exit : -60 V
 Deflect : 16 V
 Plate Bias : -40 V
 ===Octopole Parameters===
 OctP RF : 200 V
 OctP Bias : -8 V

===Q-Pole Parameters===

AMU Gain : 139
 AMU Offset : 129
 Axis Gain : 1.0013
 Axis Offset : 0.11
 QP Bias : -3 V

===Detector Parameters===

Discriminator : 4.5 mV
 Analog HV : 1844 V
 Pulse HV : 1548 V

===Reaction Cell===

Reaction Mode : OFF
 H2 Gas : --- mL/min
 He Gas : 0 mL/min
 Optional Gas : --- %

Tune File : he.u

He Gas:	4.3 mL/min	m/z	Count (Mean)	RSD%	Integration Time: 0.1000sec
Optional Gas:	---	51	2.1	97.78	
Cell Exit:	-60 V	59	553.7	5.66	
OctP Bias:	-18 V	89	526.8	5.76	
QP Bias:	-15 V				

P/A Factor Tuning Report

Acquired: Jun 12 2014 10:34 am

Mass[amu]	Element	P/A Factor
45	Sc	0.124397
52	Cr	0.131340
53	Cr	0.128518
89	Y	0.140819
111	Cd	0.150762
114	Cd	0.151353
115	In	0.150409
118	(In)	Sensitivity too low
159	Tb	0.155735
165	Ho	0.156532
206	(Pb)	0.161501
207	(Pb)	0.161457
208	Pb	0.162953
209	Bi	0.161825

===Detector Parameters===

Discriminator: 4.5 mV

Analog HV: 1844 V

Pulse HV: 1548 V

QC Tune Report

Data File: D:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 12 Jun 2014 10:41:51 am
Operator:
Misc Info:
Vial Number: 0
Current Method: D:\ICPMH\1\METHODS\TN6020.m

Minimum Response (CPS)

Element	Actual	Required	Flag
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RSD (%)

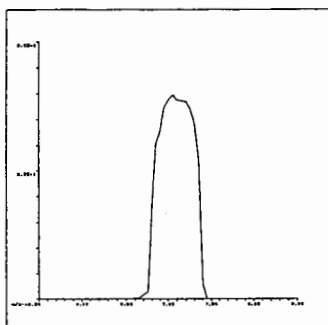
Element	Actual	Required	Flag
7 Li	1.41	5.00	
59 Co	0.53	5.00	
115 In	0.76	5.00	
205 Tl	1.61	5.00	

Ion Ratio

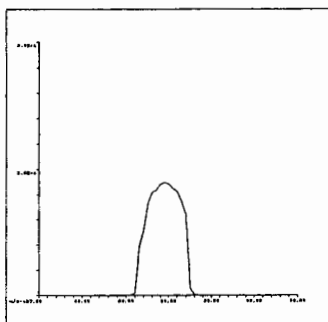
Element	Actual	Required	Flag
---------	--------	----------	------

Maximum Bkg. Count (CPS)

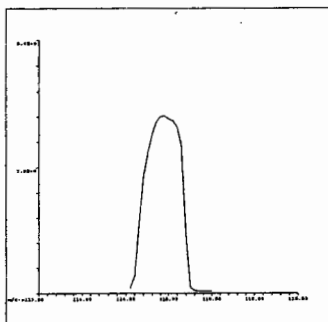
Element	Actual	Required	Flag
---------	--------	----------	------



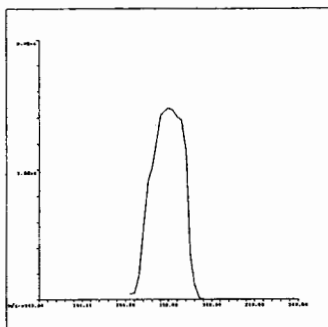
7 Li
Mass Calib.
Actual: 7.10
Required: 6.90-7.10
Flag:
Peak Width
Actual: 0.55
Required: 0.75
Flag:



59 Co
Mass Calib.
Actual: 58.95
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.55
Required: 0.75
Flag:



115 In
Mass Calib.
Actual: 114.95
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.55
Required: 0.75
Flag:



205 Tl
Mass Calib.
Actual: 205.00
Required: 204.90-205.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

QC Tune Result:Pass

D:\ICPMH\1\7500\qctune.d

Calibration Blank Report

Sample Name Cal blank
DataPath D:\ICPMH\1\DATA\6-12-14.b
Type CalBlk
Dilution 1

Data File Name 001CALB.D
AcqDate 6/12/2014 10:53
VialNumber 1101
Comment

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Cr	52	45	1	302	9.27
Cd	111	115	2	210	1.47
Pb	208	209	2	1060	5.18

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD
Sc	45	1	40419	1.69
Sc	45	2	1743001	1.11
Y	89	1	323126	2.18
Y	89	2	3494391	1.26
In	115	1	462076	2.02
In	115	2	3633123	0.44
Tb	159	2	5039273	0.59
Ho	165	2	4823444	0.49
Bi	209	1	1260858	0.83
Bi	209	2	3186618	0.50

TuneStep	TuneFile
1	he.u
2	nogas.u



Calibration Blank Report

Sample Name Cal blank
DataPath D:\ICPMH\1\DATA\6-12-14.b
Type CalBlk
Dilution 1

Data File Name 002CALB.D
AcqDate 6/12/2014 11:00
VialNumber 1101
Comment

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Cr	52	45	1	265	9.93
Cd	111	115	2	156	7.73
Pb	208	209	2	796	6.94

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD
Sc	45	1	44027	1.68
Sc	45	2	1790401	0.93
Y	89	1	355873	0.56
Y	89	2	3620799	0.34
In	115	1	504494	0.59
In	115	2	3773528	1.08
Tb	159	2	5220780	0.55
Ho	165	2	5017508	1.34
Bi	209	1	1355107	0.34
Bi	209	2	3337304	0.70

TuneStep	TuneFile
1	he.u
2	nogas.u

Calibration Standard Report

Sample Name 0.5 ppb
DataPath D:\ICPMH\1\DATA\6-12-14.b
Type CalStd
Dilution 1
Operator EScarborough

Data File Name 001CAL.S.D
AcqDate 6/12/2014 11:07
VialNumber 1102
Comment
ISTDRefDataFileName 002CALB.D

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Cr	52	45	1	1749	1.54
Cd	111	115	2	2607	4.72
Pb	208	209	2	18585	1.99

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	44787	1.95	44027	101.7	60	125	
Sc	45	2	1800044	0.56	1790401	100.5	60	125	
Y	89	1	361503	0.20	355873	101.6	60	125	
Y	89	2	3670235	0.62	3620799	101.4	60	125	
In	115	1	510383	0.54	504494	101.2	60	125	
In	115	2	3800707	1.08	3773528	100.7	60	125	
Tb	159	2	5290333	0.92	5220780	101.3	60	125	
Ho	165	2	5093029	0.24	5017508	101.5	60	125	
Bi	209	1	1377251	0.57	1355107	101.6	60	125	
Bi	209	2	3420546	0.19	3337304	102.5	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Calibration Standard Report

Sample Name	1.0 ppb	Data File Name	002CAL.S.D
DataPath	D:\ICPMH\1\DATA\6-12-14.b	AcqDate	6/12/2014 11:14
Type	CalStd	VialNumber	1103
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Cr	52	45	1	3079	2.42
Cd	111	115	2	4947	4.16
Pb	208	209	2	31765	0.46

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	45137	1.02	44027	102.5	60	125	
Sc	45	2	1799571	1.32	1790401	100.5	60	125	
Y	89	1	359027	0.67	355873	100.9	60	125	
Y	89	2	3719726	0.81	3620799	102.7	60	125	
In	115	1	508272	0.42	504494	100.7	60	125	
In	115	2	3849845	0.57	3773528	102.0	60	125	
Tb	159	2	5372791	0.46	5220780	102.9	60	125	
Ho	165	2	5136131	0.56	5017508	102.4	60	125	
Bi	209	1	1377737	0.33	1355107	101.7	60	125	
Bi	209	2	3471316	0.42	3337304	104.0	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Calibration Standard Report

Sample Name 10 ppb
DataPath D:\ICPMH\1\DATA\6-12-14.b
Type CalStd
Dilution 1
Operator EScarbrough

Data File Name 003CAL.S.D
AcqDate 6/12/2014 11:20
VialNumber 1104
Comment
ISTDRefDataFileName 002CALB.D

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Cr	52	45	1	29768	0.10
Cd	111	115	2	48667	0.50
Pb	208	209	2	311481	0.76

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	45266	2.11	44027	102.8	60	125	
Sc	45	2	1841936	0.59	1790401	102.9	60	125	
Y	89	1	364431	1.64	355873	102.4	60	125	
Y	89	2	3754766	0.22	3620799	103.7	60	125	
In	115	1	517403	1.31	504494	102.6	60	125	
In	115	2	3945289	1.41	3773528	104.6	60	125	
Tb	159	2	5414055	0.97	5220780	103.7	60	125	
Ho	165	2	5228402	1.30	5017508	104.2	60	125	
Bi	209	1	1403215	1.20	1355107	103.6	60	125	
Bi	209	2	3537687	0.52	3337304	106.0	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Calibration Standard Report

Sample Name 100 ppb
DataPath D:\ICPMH\1\DATA\6-12-14.b
Type CalStd
Dilution 1
Operator EScarbrough
Data File Name 004CAL.S.D
AcqDate 6/12/2014 11:27
VialNumber 1105
Comment
ISTDRefDataFileName 002CALB.D

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Cr	52	45	1	298230	0.37
Cd	111	115	2	495637	0.62
Pb	208	209	2	3298597	0.69

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	45396	0.36	44027	103.1	60	125	
Sc	45	2	1838436	0.43	1790401	102.7	60	125	
Y	89	1	366434	0.32	355873	103.0	60	125	
Y	89	2	3815148	0.41	3620799	105.4	60	125	
In	115	1	520232	0.62	504494	103.1	60	125	
In	115	2	3960359	1.38	3773528	105.0	60	125	
Tb	159	2	5468776	0.68	5220780	104.8	60	125	
Ho	165	2	5259660	0.18	5017508	104.8	60	125	
Bi	209	1	1411311	0.39	1355107	104.1	60	125	
Bi	209	2	3575312	0.65	3337304	107.1	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Calibration Standard Report

Sample Name	200 ppb	Data File Name	005CALS.D
DataPath	D:\ICPMH\1\DATA\6-12-14.b	AcqDate	6/12/2014 11:34
Type	CalStd	VialNumber	1106
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Cr	52	45	1	595588	0.50
Cd	111	115	2	993217	1.08
Pb	208	209	2	6612723	0.97

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	45203	0.59	44027	102.7	60	125	
Sc	45	2	1839586	0.45	1790401	102.7	60	125	
Y	89	1	364707	0.34	355873	102.5	60	125	
Y	89	2	3807728	0.13	3620799	105.2	60	125	
In	115	1	515446	0.37	504494	102.2	60	125	
In	115	2	3952660	0.56	3773528	104.7	60	125	
Tb	159	2	5492943	0.73	5220780	105.2	60	125	
Ho	165	2	5280904	1.65	5017508	105.2	60	125	
Bi	209	1	1416874	0.25	1355107	104.6	60	125	
Bi	209	2	3643855	1.20	3337304	109.2	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Calibration Standard Report

Sample Name 500 ppb
DataPath D:\ICPMH\1\DATA\6-12-14.b
Type CalStd
Dilution 1
Operator EScarbrough
Data File Name 006CAL.S.D
AcqDate 6/12/2014 11:41
VialNumber 1107
Comment
ISTDRefDataFileName 002CALB.D

QC Analyte Table

Element	m/z	ISTD	Tune Step	CPS	%RSD
Cr	52	45	1	1583867	0.38
Cd	111	115	2	2639215	0.67
Pb	208	209	2	16556084	0.92

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	45637	1.43	44027	103.7	60	125	
Sc	45	2	1826789	0.43	1790401	102.0	60	125	
Y	89	1	363074	0.40	355873	102.0	60	125	
Y	89	2	3806601	0.16	3620799	105.1	60	125	
In	115	1	513116	0.55	504494	101.7	60	125	
In	115	2	3984040	0.50	3773528	105.6	60	125	
Tb	159	2	5508165	0.56	5220780	105.5	60	125	
Ho	165	2	5278514	0.72	5017508	105.2	60	125	
Bi	209	1	1441455	0.35	1355107	106.4	60	125	
Bi	209	2	3704964	1.00	3337304	111.0	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Sample Report

Sample Name	rinse	Data File Name	001SMPL.D
DataPath	D:\ICPMH\1\DATA\6-12-14.b	AcqDate	6/12/2014 11:48
Type	Sample	VialNumber	1303
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D
SamplePassFail	Pass	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	0.00	0.00	ppb	500	
Cd	111	115	2	-0.01	-0.01	ppb	500	
Pb	208	209	2	0.01	0.01	ppb	500	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	49090	0.45	44027	111.5	60	125	
Sc	45	2	1963453	0.82	1790401	109.7	60	125	
Y	89	1	385821	1.03	355873	108.4	60	125	
Y	89	2	3814296	0.42	3620799	105.3	60	125	
In	115	1	544028	0.13	504494	107.8	60	125	
In	115	2	4005382	1.35	3773528	106.1	60	125	
Tb	159	2	5353352	0.50	5220780	102.5	60	125	
Ho	165	2	5095547	0.83	5017508	101.6	60	125	
Bi	209	1	1460947	4.23	1355107	107.8	60	125	
Bi	209	2	3475126	0.23	3337304	104.1	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Continuing Calibration Blank (CCB) - US EPA Method 200.8

Sample Name	ICB	Data File Name	002SMPL.D
DataPath	D:\ICPMH\1\DATA\6-12-14.b	Acq Date Time	2014-06-12T11:55:06-05:00
Type	2-CCB	VialNumber	1101
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D
SamplePassFail	Pass	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	Units	QC High	QC Flag
Cr	52	45	1	-0.01	ppb	1.1	
Cd	111	115	2	-0.01	ppb	1.1	
Pb	208	209	2	0.01	ppb	1.1	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	46074	1.23	44027	104.7	60	125	
Sc	45	2	1849951	0.68	1790401	103.3	60	125	
Y	89	1	367477	0.41	355873	103.3	60	125	
Y	89	2	3835710	1.18	3620799	105.9	60	125	
In	115	1	518884	0.34	504494	102.9	60	125	
In	115	2	3992798	0.13	3773528	105.8	60	125	
Tb	159	2	5562951	0.83	5220780	106.6	60	125	
Ho	165	2	5316005	0.87	5017508	105.9	60	125	
Bi	209	1	1404807	0.59	1355107	103.7	60	125	
Bi	209	2	3577530	0.81	3337304	107.2	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

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(12)

Sample Report

Sample Name	0.5 ppb (LLICV)	Data File Name	003SMPL.D
DataPath	D:\ICPMH\1\DATA\6-12-14.b	AcqDate	6/12/2014 12:01
Type	Sample	VialNumber	1102
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D
SamplePassFail	Pass	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	0.48	0.48	ppb	500	
Cd	111	115	2	0.46	0.46	ppb	500	
Pb	208	209	2	0.59	0.59	ppb	500	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	46167	1.15	44027	104.9	60	125	
Sc	45	2	1846254	0.22	1790401	103.1	60	125	
Y	89	1	371927	0.57	355873	104.5	60	125	
Y	89	2	3861770	0.83	3620799	106.7	60	125	
In	115	1	522765	0.08	504494	103.6	60	125	
In	115	2	4019225	0.47	3773528	106.5	60	125	
Tb	159	2	5537405	1.09	5220780	106.1	60	125	
Ho	165	2	5347054	1.45	5017508	106.6	60	125	
Bi	209	1	1422877	0.26	1355107	105.0	60	125	
Bi	209	2	3622923	0.22	3337304	108.6	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

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⑤

Continuing Calibration Verification (CCV) - US EPA Method 200.8

Sample Name ICV
DataPathName D:\ICPMH\1\DATA\6-12-14.b
Type 2-CCV
Dilution 1
Operator EScarbrough
SamplePassFail Pass

Data File Name 004SMPL.D
AcqDate 6/12/2014 12:08
VialNumber 1105
Comment
ISTD Ref File 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	TuneStep	Meas Value	Units	ExpValue	%Rec	QC1 Low	QC1 High	QC2 Low	QC2 High	QC Flag
Cr	52	45	1	94.38	ppb	100	94.4	85	115	90	110	
Cd	111	115	2	96.27	ppb	100	96.3	85	115	90	110	
Pb	208	209	2	103.94	ppb	100	103.9	85	115	90	110	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Rec	Lower Limit	Upper Limit	QC Flag
Sc	45	1	46879	2.54	44027	106.5	60	125	
Sc	45	2	1850574	0.20	1790401	103.4	60	125	
Y	89	1	372162	0.69	355873	104.6	60	125	
Y	89	2	3847959	0.35	3620799	106.3	60	125	
In	115	1	525555	0.70	504494	104.2	60	125	
In	115	2	4010838	0.79	3773528	106.3	60	125	
Tb	159	2	5580523	0.18	5220780	106.9	60	125	
Ho	165	2	5328809	0.62	5017508	106.2	60	125	
Bi	209	1	1472683	4.59	1355107	108.7	60	125	
Bi	209	2	3669428	1.08	3337304	110.0	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

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(B)

Continuing Calibration Verification (CCV) - US EPA Method 200.8

Sample Name SCP Science (100)
DataPathName D:\ICPMH\1\DATA\6-12-14.b
Type 2-CCV
Dilution 1
Operator EScarborough
SamplePassFail Pass

Data File Name 005SMPL.D
AcqDate 6/12/2014 12:15
VialNumber 1301
Comment
ISTD Ref File 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	TuneStep	Meas Value	Units	ExpValue	%Rec	QC1 Low	QC1 High	QC2 Low	QC2 High	QC Flag
Cr	52	45	1	92.63	ppb	100	92.6	85	115	90	110	
Cd	111	115	2	93.34	ppb	100	93.3	85	115	90	110	
Pb	208	209	2	101.44	ppb	100	101.4	85	115	90	110	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Rec	Lower Limit	Upper Limit	QC Flag
Sc	45	1	46810	0.65	44027	106.3	60	125	
Sc	45	2	1835636	0.52	1790401	102.5	60	125	
Y	89	1	369267	0.08	355873	103.8	60	125	
Y	89	2	3838329	0.10	3620799	106.0	60	125	
In	115	1	517341	0.75	504494	102.5	60	125	
In	115	2	4023611	0.33	3773528	106.6	60	125	
Tb	159	2	5578502	0.22	5220780	106.9	60	125	
Ho	165	2	5342370	0.43	5017508	106.5	60	125	
Bi	209	1	1433299	0.23	1355107	105.8	60	125	
Bi	209	2	3670005	0.80	3337304	110.0	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

6-12-14
②

Sample Report

Sample Name	QPod Element	Data File Name	006SMPL.D
DataPath	D:\ICPMH\1\DATA\6-12-14.b	AcqDate	6/12/2014 12:22
Type	Sample	VialNumber	2401
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D
SamplePassFail	Fail	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	-0.04	-0.04	ppb	500	
Cd	111	115	2	-0.02	-0.02	ppb	500	
Pb	208	209	2	0.01	0.01	ppb	500	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	48692	1.48	44027	110.6	60	125	
Sc	45	2	2024590	0.38	1790401	113.1	60	125	
Y	89	1	396381	0.25	355873	111.4	60	125	
Y	89	2	3944205	0.54	3620799	108.9	60	125	
In	115	1	493063	4.14	504494	97.7	60	125	
In	115	2	4085451	1.23	3773528	108.3	60	125	
Tb	159	2	5524381	1.26	5220780	105.8	60	125	
Ho	165	2	5276423	0.70	5017508	105.2	60	125	
Bi	209	1	612468	2.88	1355107	45.2	60	125	IS Fail
Bi	209	2	1686324	1.51	3337304	50.5	60	125	IS Fail

TuneStep	TuneFile
1	he.u
2	nogas.u

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⑤

Laboratory Reagent Blank (LRB) - US EPA Method 200.8

Sample Name	LRB	Data File Name	007SMPL.D
DataPath	D:\ICPMH\1\DATA\6-12-14.b	AcqDate	6/12/2014 12:29
Type	2-LRB	VialNumber	2101
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D
SamplePassFail	Pass	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	Units	QC High	QC Flag
Cr	52	45	1	0.87	ppb	1.1	
Cd	111	115	2	-0.01	ppb	1.1	
Pb	208	209	2	0.08	ppb	1.1	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	46440	0.66	44027	105.5	60	125	
Sc	45	2	1869348	0.92	1790401	104.4	60	125	
Y	89	1	368238	0.67	355873	103.5	60	125	
Y	89	2	3884675	0.64	3620799	107.3	60	125	
In	115	1	520812	0.87	504494	103.2	60	125	
In	115	2	4061865	0.54	3773528	107.6	60	125	
Tb	159	2	5612621	0.37	5220780	107.5	60	125	
Ho	165	2	5371356	0.43	5017508	107.1	60	125	
Bi	209	1	1456584	0.29	1355107	107.5	60	125	
Bi	209	2	3748696	0.45	3337304	112.3	60	125	

TuneStep	TuneFile	TuneDate
1	he.u	6/12/2014 12:27:00 PM
2	nogas.u	6/12/2014 12:27:00 PM

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②

Laboratory Fortified Blank (LFB) - US EPA Method 200.8

Sample Name	LFB	Data File Name	008SMPL.D
DataPath	D:\ICPMH\1\DATA\6-12-14.b	AcqDate	6/12/2014 12:36
Type	2-LFB	VialNumber	2102
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D
SamplePassFail	Pass	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Conc.	Units	Spike Amt	%Recovery	%QC Low	%QC High	QC Flag
Cr	52	45	1	99.44	ppb	100	98.6	85	115	
Cd	111	115	2	97.40	ppb	100	97.4	85	115	
Pb	208	209	2	104.26	ppb	100	104.2	85	115	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limiy	Upper Limit	QC Flag
Sc	45	1	45750	0.50	44027	103.9	60	125	
Sc	45	2	1847996	0.74	1790401	103.2	60	125	
Y	89	1	367823	0.59	355873	103.4	60	125	
Y	89	2	3877773	0.25	3620799	107.1	60	125	
In	115	1	517463	0.18	504494	102.6	60	125	
In	115	2	4032318	0.71	3773528	106.9	60	125	
Tb	159	2	5658709	0.32	5220780	108.4	60	125	
Ho	165	2	5442564	0.33	5017508	108.5	60	125	
Bi	209	1	1490572	4.23	1355107	110.0	60	125	
Bi	209	2	3795443	0.62	3337304	113.7	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

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(6)

Laboratory Reagent Blank (LRB) - US EPA Method 200.8

Sample Name	TCLP Blank	Data File Name	009SMPL.D
DataPath	D:\ICPMH\1\DATA\6-12-14.b	AcqDate	6/12/2014 12:42
Type	2-LRB	VialNumber	2103
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D
SamplePassFail	Pass	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	Units	QC High	QC Flag
Cr	52	45	1	0.00	ppb	1.1	
Cd	111	115	2	-0.01	ppb	1.1	
Pb	208	209	2	0.04	ppb	1.1	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	48157	0.85	44027	109.4	60	125	
Sc	45	2	1928247	0.15	1790401	107.7	60	125	
Y	89	1	384217	0.40	355873	108.0	60	125	
Y	89	2	4046215	1.02	3620799	111.7	60	125	
In	115	1	543428	0.31	504494	107.7	60	125	
In	115	2	4216116	1.16	3773528	111.7	60	125	
Tb	159	2	5900473	1.12	5220780	113.0	60	125	
Ho	165	2	5685047	0.97	5017508	113.3	60	125	
Bi	209	1	1621457	0.50	1355107	119.7	60	125	
Bi	209	2	3980880	0.38	3337304	119.3	60	125	

TuneStep	TuneFile	TuneDate
1	he.u	6/12/2014 12:41:00 PM
2	nogas.u	6/12/2014 12:41:00 PM

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(6)

All Reference (AllRef) Sample Report

Sample Name aa62146 1:10
 Data File Name 010SMPL.D
 DataPath D:\ICPMH\1\DATA\6-12-14.b
 Acq Date Time 2014-06-12T12:49:46-05:00
 AcqDate 6/12/2014 12:49
 Type AllRef
 VialNumber 2104
 Dilution 1
 Comment
 Operator EScarbrough
 ISTDRefDataFileName 002CALB.D
 SamplePassFail Pass
 ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	20.32	20.32	ppb	450	
Cd	111	115	2	226.21	226.21	ppb	450	
Pb	208	209	2	1.23	1.23	ppb	450	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	48388	0.38	44027	109.9	60	125	
Sc	45	2	1920504	1.38	1790401	107.3	60	125	
Y	89	1	375293	0.31	355873	105.5	60	125	
Y	89	2	3862681	0.74	3620799	106.7	60	125	
In	115	1	529747	0.12	504494	105.0	60	125	
In	115	2	4003460	0.91	3773528	106.1	60	125	
Tb	159	2	5551076	0.88	5220780	106.3	60	125	
Ho	165	2	5308358	0.29	5017508	105.8	60	125	
Bi	209	1	1441545	3.39	1355107	106.4	60	125	
Bi	209	2	3563943	0.54	3337304	106.8	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Chromium

$$20.32 \times 10 = 203.2 = \textcircled{203}$$

Cadmium

$$226.21 \times 10 = 2262.1 = \textcircled{2260}$$

Lead

$$1.23 \times 10 = \textcircled{12.3}$$

$$MQL = 0.5 \times 10 = 5$$

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⑤

Laboratory Fortified Matrix (LFM) Sample Report - US EPA Method 200.8

Sample Name	aa62146 MS 1:10	Data File Name	011SMPL.D
DataPath	D:\ICPMH\1\DATA\6-12-14.B	AcqDate	6/12/2014 12:56
Type	2-LFM1	VialNumber	2105
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D
QC Reference DataFile Name	010SMPL.D	SamplePassFail	Fail

QC Analyte Table

Element	m/z	ISTD	Tune Step	Conc.	Ref. Conc.	Units	Spike Amt	%Recovery	%QC Low	%QC High	QC Flag
Cr	52	45	1	32.45	20.32	ppb	10	121.3	75	125	
Cd	111	115	2	278.79	226.21	ppb	10	525.8	75	125	>+-25%
Pb	208	209	2	11.27	1.23	ppb	10	100.5	75	125	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	47948	0.20	44027	108.9	60	125	
Sc	45	2	1948322	0.56	1790401	108.8	60	125	
Y	89	1	372934	0.30	355873	104.8	60	125	
Y	89	2	3865242	0.29	3620799	106.8	60	125	
In	115	1	523948	0.25	504494	103.9	60	125	
In	115	2	4027127	0.87	3773528	106.7	60	125	
Tb	159	2	5507156	0.67	5220780	105.5	60	125	
Ho	165	2	5289420	1.11	5017508	105.4	60	125	
Bi	209	1	1393847	0.16	1355107	102.9	60	125	
Bi	209	2	3530073	0.93	3337304	105.8	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Actual spike was 100 ppb, but this
is a 1:10 dilution, so the value was
changed for calculation purposes.

6-13-14
(15)

Laboratory Fortified Matrix Duplicate (LFMDup) Sample Report - US EPA 200.8

Sample Name	aa62146 MSD 1:10	Data File Name	012SMPL.D
DataPath	D:\ICPMH\1\DATA\6-12-14.b	AcqDate	6/12/2014 13:03
Type	2-LFMDup	VialNumber	2106
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D
QCRefDataFileName	011SMPL.D	SamplePassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Conc.	Ref. Conc	Units	RPD	%QC High	QC Flag
Cr	52	45	1	36.61	32.45	ppb	12.0	20	
Cd	111	115	2	313.71	278.79	ppb	11.8	20	
Pb	208	209	2	11.76	11.27	ppb	4.3	20	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	%Recovery	Reference CPS	Lower Limiy	Upper Limit	QC Flag
Sc	45	1	49538	0.46	112.5	44027	60	125	
Sc	45	2	1954120	0.73	109.1	1790401	60	125	
Y	89	1	376050	1.24	105.7	355873	60	125	
Y	89	2	3881282	0.40	107.2	3620799	60	125	
In	115	1	529190	1.37	104.9	504494	60	125	
In	115	2	4004492	0.92	106.1	3773528	60	125	
Tb	159	2	5490736	0.61	105.2	5220780	60	125	
Ho	165	2	5259143	0.45	104.8	5017508	60	125	
Bi	209	1	1434251	5.40	105.8	1355107	60	125	
Bi	209	2	3527349	0.73	105.7	3337304	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

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⑤

Sample Report

Sample Name aa62147 1:10
DataPath D:\ICPMH\1\DATA\6-12-14.b
Type Sample
Dilution 1
Operator EScarbrough
SamplePassFail Pass

Data File Name 013SMPL.D
AcqDate 6/12/2014 13:10
VialNumber 2107
Comment
ISTDRefDataFileName 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	21.19	21.19	ppb	500	
Cd	111	115	2	331.60	331.60	ppb	500	
Pb	208	209	2	1.56	1.56	ppb	500	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	49335	0.46	44027	112.1	60	125	
Sc	45	2	1965909	0.98	1790401	109.8	60	125	
Y	89	1	375783	0.33	355873	105.6	60	125	
Y	89	2	3898750	0.47	3620799	107.7	60	125	
In	115	1	529419	0.14	504494	104.9	60	125	
In	115	2	4059881	0.09	3773528	107.6	60	125	
Tb	159	2	5533242	1.02	5220780	106.0	60	125	
Ho	165	2	5306201	0.48	5017508	105.8	60	125	
Bi	209	1	1404174	0.20	1355107	103.6	60	125	
Bi	209	2	3563703	0.71	3337304	106.8	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Chromium

$$21.19 \times 10 = 211.9 = \textcircled{212}$$

Cadmium

$$331.60 \times 10 = 3316 = \textcircled{3320}$$

Lead

$$1.56 \times 10 = \textcircled{15.6}$$

$$MQL = 0.5 \times 10 = 5$$

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Sample Report

Sample Name	aa62148 1:10	Data File Name	014SMPL.D
DataPath	D:\ICPMH\1\DATA\6-12-14.b	AcqDate	6/12/2014 13:16
Type	Sample	VialNumber	2108
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D
SamplePassFail	Pass	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	10.06	10.06	ppb	500	
Cd	111	115	2	120.87	120.87	ppb	500	
Pb	208	209	2	0.23	0.23	ppb	500	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	49311	1.26	44027	112.0	60	125	
Sc	45	2	1951475	0.04	1790401	109.0	60	125	
Y	89	1	379456	1.33	355873	106.6	60	125	
Y	89	2	3914420	0.51	3620799	108.1	60	125	
In	115	1	533109	1.44	504494	105.7	60	125	
In	115	2	4007098	0.67	3773528	106.2	60	125	
Tb	159	2	5516601	0.39	5220780	105.7	60	125	
Ho	165	2	5279019	0.32	5017508	105.2	60	125	
Bi	209	1	1404078	1.31	1355107	103.6	60	125	
Bi	209	2	3546817	0.63	3337304	106.3	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Chromium

$$10.06 \times 10 = 100.6 = \textcircled{101}$$

Cadmium

$$120.87 \times 10 = 1208.7 = \textcircled{1210}$$

Lead

$$0.23 \times 10 = \textcircled{2.3} < \text{MQL}$$

$$\text{MQL} = 0.5 \times 10 = 5$$

6-13-14
⑤

Sample Report

Sample Name	aa62149 1:10	Data File Name	015SMPL.D
DataPath	D:\ICPMH\1\DATA\6-12-14.b	AcqDate	6/12/2014 13:23
Type	Sample	VialNumber	2109
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D
SamplePassFail	Pass	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	21.65	21.65	ppb	500	
Cd	111	115	2	250.87	250.87	ppb	500	
Pb	208	209	2	1.38	1.38	ppb	500	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	49060	1.20	44027	111.4	60	125	
Sc	45	2	1961574	0.26	1790401	109.6	60	125	
Y	89	1	382730	2.16	355873	107.5	60	125	
Y	89	2	3931638	0.54	3620799	108.6	60	125	
In	115	1	535069	1.82	504494	106.1	60	125	
In	115	2	4052678	1.08	3773528	107.4	60	125	
Tb	159	2	5526967	0.26	5220780	105.9	60	125	
Ho	165	2	5319345	1.35	5017508	106.0	60	125	
Bi	209	1	1457972	6.18	1355107	107.6	60	125	
Bi	209	2	3528232	0.55	3337304	105.7	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Chromium

$$21.65 \times 10 = 216.5 = \textcircled{217}$$

Cadmium

$$250.87 \times 10 = 2508.7 = \textcircled{2510}$$

Lead

$$1.38 \times 10 = \textcircled{13.8}$$

$$MQL = 0.5 \times 10 = 5$$

6-13-14
②

Sample Report

Sample Name	aa62150 1:10	Data File Name	016SMPL.D
DataPath	D:\ICPMH\1\DATA\6-12-14.b	AcqDate	6/12/2014 13:30
Type	Sample	VialNumber	2110
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D
SamplePassFail	Pass	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	18.03	18.03	ppb	500	
Cd	111	115	2	210.17	210.17	ppb	500	
Pb	208	209	2	0.75	0.75	ppb	500	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	48702	0.38	44027	110.6	60	125	
Sc	45	2	1959167	0.55	1790401	109.4	60	125	
Y	89	1	376569	0.26	355873	105.8	60	125	
Y	89	2	3918070	0.50	3620799	108.2	60	125	
In	115	1	525173	1.24	504494	104.1	60	125	
In	115	2	4041209	0.46	3773528	107.1	60	125	
Tb	159	2	5530312	0.98	5220780	105.9	60	125	
Ho	165	2	5327502	1.26	5017508	106.2	60	125	
Bi	209	1	1395513	1.43	1355107	103.0	60	125	
Bi	209	2	3573062	0.49	3337304	107.1	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Chromium

$$18.03 \times 10 = 180.3 = \textcircled{180}$$

Cadmium

$$210.17 \times 10 = 2101.7 = \textcircled{2100}$$

Lead

$$0.75 \times 10 = \textcircled{7.5}$$

$$MQL = 0.5 \times 10 = 5$$

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Sample Report

Sample Name	rinse	Data File Name	017SMPL.D
DataPath	D:\ICPMH\1\DATA\6-12-14.b	AcqDate	6/12/2014 13:37
Type	Sample	VialNumber	1303
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D
SamplePassFail	Pass	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	-0.04	-0.04	ppb	500	
Cd	111	115	2	-0.01	-0.01	ppb	500	
Pb	208	209	2	-0.01	-0.01	ppb	500	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	49874	0.86	44027	113.3	60	125	
Sc	45	2	1939353	0.53	1790401	108.3	60	125	
Y	89	1	382048	0.13	355873	107.4	60	125	
Y	89	2	3884847	0.65	3620799	107.3	60	125	
In	115	1	540672	0.02	504494	107.2	60	125	
In	115	2	4050955	0.70	3773528	107.4	60	125	
Tb	159	2	5523088	1.66	5220780	105.8	60	125	
Ho	165	2	5275869	1.27	5017508	105.1	60	125	
Bi	209	1	1438885	0.66	1355107	106.2	60	125	
Bi	209	2	3628015	0.76	3337304	108.7	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Continuing Calibration Blank (CCB) - US EPA Method 200.8

Sample Name	CCB	Data File Name	018SMPL.D
DataPath	D:\ICPMH\1\DATA\6-12-14.b	Acq Date Time	2014-06-12T13:44:11-05:00
Type	2-CCB	VialNumber	1101
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D
SamplePassFail	Pass	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	Units	QC High	QC Flag
Cr	52	45	1	-0.02	ppb	1.1	
Cd	111	115	2	0.01	ppb	1.1	
Pb	208	209	2	0.00	ppb	1.1	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	47170	1.67	44027	107.1	60	125	
Sc	45	2	1837733	1.01	1790401	102.6	60	125	
Y	89	1	371074	0.42	355873	104.3	60	125	
Y	89	2	3915821	1.16	3620799	108.1	60	125	
In	115	1	518915	0.45	504494	102.9	60	125	
In	115	2	4015699	1.12	3773528	106.4	60	125	
Tb	159	2	5620821	1.03	5220780	107.7	60	125	
Ho	165	2	5387669	1.10	5017508	107.4	60	125	
Bi	209	1	1439574	1.13	1355107	106.2	60	125	
Bi	209	2	3643543	0.84	3337304	109.2	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

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⑥

Sample Report

Sample Name	0.5 ppb (LLCV)	Data File Name	019SMPL.D
DataPath	D:\ICPMH\1\DATA\6-12-14.b	AcqDate	6/12/2014 13:51
Type	Sample	VialNumber	1102
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D
SamplePassFail	Pass	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	0.48	0.48	ppb	500	
Cd	111	115	2	0.47	0.47	ppb	500	
Pb	208	209	2	0.55	0.55	ppb	500	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	46935	1.66	44027	106.6	60	125	
Sc	45	2	1845781	1.83	1790401	103.1	60	125	
Y	89	1	367419	0.14	355873	103.2	60	125	
Y	89	2	3966461	1.95	3620799	109.5	60	125	
In	115	1	516858	0.86	504494	102.5	60	125	
In	115	2	4114690	1.49	3773528	109.0	60	125	
Tb	159	2	5730742	1.66	5220780	109.8	60	125	
Ho	165	2	5515616	2.18	5017508	109.9	60	125	
Bi	209	1	1424451	0.05	1355107	105.1	60	125	
Bi	209	2	3765143	1.55	3337304	112.8	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

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(6)

Continuing Calibration Verification (CCV) - US EPA Method 200.8

Sample Name CCV
DataPathName D:\ICPMH\1\DATA\6-12-14.b
Type 2-CCV
Dilution 1
Operator EScarbrough
SamplePassFail Pass

Data File Name 020SMPL.D
AcqDate 6/12/2014 13:57
VialNumber 1105
Comment
ISTD Ref File 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	TuneStep	Meas Value	Units	ExpValue	%Rec	QC1 Low	QC1 High	QC2 Low	QC2 High	QC Flag
Cr	52	45	1	97.18	ppb	100	97.2	85	115	90	110	
Cd	111	115	2	94.65	ppb	100	94.6	85	115	90	110	
Pb	208	209	2	102.84	ppb	100	102.8	85	115	90	110	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Rec	Lower Limit	Upper Limit	QC Flag
Sc	45	1	45717	0.93	44027	103.8	60	125	
Sc	45	2	1819605	0.48	1790401	101.6	60	125	
Y	89	1	370513	0.31	355873	104.1	60	125	
Y	89	2	3879860	0.60	3620799	107.2	60	125	
In	115	1	519866	0.61	504494	103.0	60	125	
In	115	2	4090844	0.58	3773528	108.4	60	125	
Tb	159	2	5659740	0.48	5220780	108.4	60	125	
Ho	165	2	5452754	0.67	5017508	108.7	60	125	
Bi	209	1	1446672	0.37	1355107	106.8	60	125	
Bi	209	2	3742972	0.50	3337304	112.2	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

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⑤

Continuing Calibration Verification (CCV) - US EPA Method 200.8

Sample Name SCP Science (100)
DataPathName D:\ICPMH\1\DATA\6-12-14.b
Type 2-CCV
Dilution 1
Operator EScarbrough
SamplePassFail Pass

Data File Name 021SMPL.D
AcqDate 6/12/2014 14:04
VialNumber 1301
Comment
ISTD Ref File 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	TuneStep	Meas Value	Units	ExpValue	%Rec	QC1 Low	QC1 High	QC2 Low	QC2 High	QC Flag
Cr	52	45	1	94.65	ppb	100	94.7	85	115	90	110	
Cd	111	115	2	92.92	ppb	100	92.9	85	115	90	110	
Pb	208	209	2	100.87	ppb	100	100.9	85	115	90	110	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Rec	Lower Limit	Upper Limit	QC Flag
Sc	45	1	45608	0.33	44027	103.6	60	125	
Sc	45	2	1814447	0.18	1790401	101.3	60	125	
Y	89	1	365468	0.77	355873	102.7	60	125	
Y	89	2	3885879	0.49	3620799	107.3	60	125	
In	115	1	519825	0.31	504494	103.0	60	125	
In	115	2	4056960	0.76	3773528	107.5	60	125	
Tb	159	2	5653622	0.68	5220780	108.3	60	125	
Ho	165	2	5473458	0.53	5017508	109.1	60	125	
Bi	209	1	1484300	4.53	1355107	109.5	60	125	
Bi	209	2	3780103	0.92	3337304	113.3	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

6-12-14
⑬

Sample Report

Sample Name rinse
DataPath D:\ICPMH\1\DATA\6-12-14.b
Type Sample
Dilution 1
Operator EScarbrough
SamplePassFail Pass

Data File Name 022SMPL.D
AcqDate 6/12/2014 14:11
VialNumber 1303
Comment
ISTDRefDataFileName 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	-0.05	-0.05	ppb	500	
Cd	111	115	2	-0.01	-0.01	ppb	500	
Pb	208	209	2	0.00	0.00	ppb	500	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	49213	0.60	44027	111.8	60	125	
Sc	45	2	1940646	0.09	1790401	108.4	60	125	
Y	89	1	384904	0.43	355873	108.2	60	125	
Y	89	2	3911282	0.76	3620799	108.0	60	125	
In	115	1	542806	0.55	504494	107.6	60	125	
In	115	2	4106701	0.89	3773528	108.8	60	125	
Tb	159	2	5553122	0.31	5220780	106.4	60	125	
Ho	165	2	5327100	0.47	5017508	106.2	60	125	
Bi	209	1	1454797	0.11	1355107	107.4	60	125	
Bi	209	2	3672726	1.05	3337304	110.1	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

All Reference (AllRef) Sample Report

Sample Name aa62146
Data File Name 023SMPL.D
DataPath D:\ICPMH\1\DATA\6-12-14.b
Acq Date Time 2014-06-12T14:18:19-05:00
AcqDate 6/12/2014 14:18
Type AllRef
VialNumber 2201
Dilution 1
Comment
Operator EScarbrough
ISTDRefDataFileName 002CALB.D
SamplePassFail Fail
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	198.61	198.61	ppb	450	
Cd	111	115	2	2281.34	2281.34	ppb	450	>LDR
Pb	208	209	2	12.51	12.51	ppb	450	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	41804	1.48	44027	95.0	60	125	
Sc	45	2	1685955	2.46	1790401	94.2	60	125	
Y	89	1	340119	0.58	355873	95.6	60	125	
Y	89	2	3578044	3.12	3620799	98.8	60	125	
In	115	1	444860	0.74	504494	88.2	60	125	
In	115	2	3445114	2.57	3773528	91.3	60	125	
Tb	159	2	5044807	2.50	5220780	96.6	60	125	
Ho	165	2	4870939	3.48	5017508	97.1	60	125	
Bi	209	1	1210093	0.30	1355107	89.3	60	125	
Bi	209	2	3144152	3.06	3337304	94.2	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

These samples were run straight, but no data
 was used. Only the dilution values were used
 in calculations. (ES)

6-13-14
 (ES)

Laboratory Fortified Matrix (LFM) Sample Report - US EPA Method 200.8

Sample Name	aa62146 MS	Data File Name	024SMPL.D
DataPath	D:\ICPMH\1\DATA\6-12-14.b	AcqDate	6/12/2014 14:24
Type	2-LFM1	VialNumber	2202
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D
QC Reference DataFile Name	023SMPL.D	SamplePassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Conc.	Ref. Conc.	Units	Spike Amt	%Recovery	%QC Low	%QC High	QC Flag
Cr	52	45	1	305.74	198.61	ppb	100	107.1	75	125	
Cd	111	115	2	2604.92	2281.34	ppb	100		75	125	Out of Range
Pb	208	209	2	118.70	12.51	ppb	100	106.2	75	125	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	36588	1.50	44027	83.1	60	125	
Sc	45	2	1548081	1.57	1790401	86.5	60	125	
Y	89	1	306915	1.28	355873	86.2	60	125	
Y	89	2	3245954	0.79	3620799	89.6	60	125	
In	115	1	407650	1.61	504494	80.8	60	125	
In	115	2	3160687	1.15	3773528	83.8	60	125	
Tb	159	2	4606706	1.30	5220780	88.2	60	125	
Ho	165	2	4456848	1.40	5017508	88.8	60	125	
Bi	209	1	1116188	1.70	1355107	82.4	60	125	
Bi	209	2	2892837	1.11	3337304	86.7	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Laboratory Fortified Matrix Duplicate (LFMDup) Sample Report - US EPA 200.8

Sample Name	aa62146 MSD	Data File Name	025SMPL.D
DataPath	D:\ICPMH\1\DATA\6-12-14.b	AcqDate	6/12/2014 14:31
Type	2-LFMDup	VialNumber	2203
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D
QCRefDataFileName	024SMPL.D	SamplePassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Conc.	Ref. Conc	Units	RPD	%QC High	QC Flag
Cr	52	45	1	323.03	305.74	ppb	5.5	20	
Cd	111	115	2	2814.43	2604.92	ppb		20	Out of Range
Pb	208	209	2	122.42	118.70	ppb	3.1	20	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	%Recovery	Reference CPS	Lower Limiy	Upper Limit	QC Flag
Sc	45	1	31621	2.98	71.8	44027	60	125	
Sc	45	2	1341383	0.58	74.9	1790401	60	125	
Y	89	1	273459	2.30	76.8	355873	60	125	
Y	89	2	2853095	0.76	78.8	3620799	60	125	
In	115	1	363314	2.25	72.0	504494	60	125	
In	115	2	2809811	0.77	74.5	3773528	60	125	
Tb	159	2	4110930	0.61	78.7	5220780	60	125	
Ho	165	2	3961970	0.76	79.0	5017508	60	125	
Bi	209	1	1013967	1.15	74.8	1355107	60	125	
Bi	209	2	2576566	0.81	77.2	3337304	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Sample Report

Sample Name aa62147	Data File Name 026SMPL.D
DataPath D:\ICPMH\1\DATA\6-12-14.b	AcqDate 6/12/2014 14:38
Type Sample	VialNumber 2204
Dilution 1	Comment
Operator EScarbrough	ISTDRefDataFileName 002CALB.D
SamplePassFail Fail	ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	212.52	212.52	ppb	500	
Cd	111	115	2	3050.26	3050.26	ppb	500	>LDR
Pb	208	209	2	15.89	15.89	ppb	500	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	26054	1.46	44027	59.2	60	125	IS Fail
Sc	45	2	1019587	2.33	1790401	56.9	60	125	IS Fail
Y	89	1	234200	1.44	355873	65.8	60	125	
Y	89	2	2484393	2.01	3620799	68.6	60	125	
In	115	1	318301	2.17	504494	63.1	60	125	
In	115	2	2515958	1.88	3773528	66.7	60	125	
Tb	159	2	3697910	2.83	5220780	70.8	60	125	
Ho	165	2	3558312	2.65	5017508	70.9	60	125	
Bi	209	1	927147	0.96	1355107	68.4	60	125	
Bi	209	2	2331292	2.92	3337304	69.9	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Sample Report

Sample Name	aa62148	Data File Name	027SMPL.D
DataPath	D:\ICPMH\1\DATA\6-12-14.b	AcqDate	6/12/2014 14:44
Type	Sample	VialNumber	2205
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D
SamplePassFail	Fail	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	99.25	99.25	ppb	500	
Cd	111	115	2	1193.55	1193.55	ppb	500	>LDR
Pb	208	209	2	2.37	2.37	ppb	500	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	22820	4.94	44027	51.8	60	125	IS Fail
Sc	45	2	866030	1.70	1790401	48.4	60	125	IS Fail
Y	89	1	203405	3.11	355873	57.2	60	125	IS Fail
Y	89	2	2110719	1.72	3620799	58.3	60	125	IS Fail
In	115	1	288737	3.35	504494	57.2	60	125	IS Fail
In	115	2	2244854	1.53	3773528	59.5	60	125	IS Fail
Tb	159	2	3299695	1.51	5220780	63.2	60	125	
Ho	165	2	3171923	1.65	5017508	63.2	60	125	
Bi	209	1	857891	2.60	1355107	63.3	60	125	
Bi	209	2	2070694	1.51	3337304	62.0	60	125	

TuneStep	TuneFile
1	he.u
2	nogas.u

Sample Report

Sample Name	aa62149	Data File Name	028SMPL.D
DataPath	D:\ICPMH\1\DATA\6-12-14.b	AcqDate	6/12/2014 14:51
Type	Sample	VialNumber	2206
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D
SamplePassFail	Fail	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	216.15	216.15	ppb	500	
Cd	111	115	2	2427.43	2427.43	ppb	500	>LDR
Pb	208	209	2	13.61	13.61	ppb	500	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	19512	0.72	44027	44.3	60	125	IS Fail
Sc	45	2	762230	1.13	1790401	42.6	60	125	IS Fail
Y	89	1	188468	1.76	355873	53.0	60	125	IS Fail
Y	89	2	1911410	1.24	3620799	52.8	60	125	IS Fail
In	115	1	263716	1.72	504494	52.3	60	125	IS Fail
In	115	2	2009504	1.51	3773528	53.3	60	125	IS Fail
Tb	159	2	2943246	1.49	5220780	56.4	60	125	IS Fail
Ho	165	2	2836764	1.59	5017508	56.5	60	125	IS Fail
Bi	209	1	806018	2.44	1355107	59.5	60	125	IS Fail
Bi	209	2	1843446	1.27	3337304	55.2	60	125	IS Fail

TuneStep	TuneFile
1	he.u
2	nogas.u

Sample Report

Sample Name	aa62150	Data File Name	029SMPL.D
DataPath	D:\ICPMH\1\DATA\6-12-14.b	AcqDate	6/12/2014 14:58
Type	Sample	VialNumber	2207
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D
SamplePassFail	Fail	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	177.65	177.65	ppb	500	
Cd	111	115	2	2010.78	2010.78	ppb	500	>LDR
Pb	208	209	2	8.06	8.06	ppb	500	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	16119	2.53	44027	36.6	60	125	IS Fail
Sc	45	2	626438	1.44	1790401	35.0	60	125	IS Fail
Y	89	1	158023	1.47	355873	44.4	60	125	IS Fail
Y	89	2	1592028	0.59	3620799	44.0	60	125	IS Fail
In	115	1	225846	1.64	504494	44.8	60	125	IS Fail
In	115	2	1718912	1.38	3773528	45.6	60	125	IS Fail
Tb	159	2	2537533	1.53	5220780	48.6	60	125	IS Fail
Ho	165	2	2433368	1.63	5017508	48.5	60	125	IS Fail
Bi	209	1	711543	0.78	1355107	52.5	60	125	IS Fail
Bi	209	2	1507905	6.06	3337304	45.2	60	125	IS Fail

TuneStep	TuneFile
1	he.u
2	nogas.u

Sample Report

Sample Name	rinse	Data File Name	030SMPL.D
DataPath	D:\ICPMH\1\DATA\6-12-14.b	AcqDate	6/12/2014 15:05
Type	Sample	VialNumber	1303
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D
SamplePassFail	Fail	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	0.02	0.02	ppb	500	
Cd	111	115	2	0.04	0.04	ppb	500	
Pb	208	209	2	-0.01	-0.01	ppb	500	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	16672	0.88	44027	37.9	60	125	IS Fail
Sc	45	2	589054	0.69	1790401	32.9	60	125	IS Fail
Y	89	1	155291	0.29	355873	43.6	60	125	IS Fail
Y	89	2	1508407	0.58	3620799	41.7	60	125	IS Fail
In	115	1	238347	0.56	504494	47.2	60	125	IS Fail
In	115	2	1776420	0.61	3773528	47.1	60	125	IS Fail
Tb	159	2	2441592	1.38	5220780	46.8	60	125	IS Fail
Ho	165	2	2340746	0.78	5017508	46.7	60	125	IS Fail
Bi	209	1	778543	0.34	1355107	57.5	60	125	IS Fail
Bi	209	2	1635018	0.50	3337304	49.0	60	125	IS Fail

TuneStep	TuneFile
1	he.u
2	nogas.u

Continuing Calibration Blank (CCB) - US EPA Method 200.8

Sample Name	CCB	Data File Name	031SMPL.D
DataPath	D:\ICPMH\1\DATA\6-12-14.b	Acq Date Time	2014-06-12T15:12:06-05:00
Type	2-CCB	VialNumber	1101
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D
SamplePassFail	Fail	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	Units	QC High	QC Flag
Cr	52	45	1	0.03	ppb	1.1	
Cd	111	115	2	0.24	ppb	1.1	
Pb	208	209	2	-0.01	ppb	1.1	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	16139	4.34	44027	36.7	60	125	IS Fail
Sc	45	2	585015	1.38	1790401	32.7	60	125	IS Fail
Y	89	1	155210	0.40	355873	43.6	60	125	IS Fail
Y	89	2	1542300	1.46	3620799	42.6	60	125	IS Fail
In	115	1	235698	0.87	504494	46.7	60	125	IS Fail
In	115	2	1803833	1.92	3773528	47.8	60	125	IS Fail
Tb	159	2	2532416	0.76	5220780	48.5	60	125	IS Fail
Ho	165	2	2417561	1.67	5017508	48.2	60	125	IS Fail
Bi	209	1	774143	0.24	1355107	57.1	60	125	IS Fail
Bi	209	2	1664457	0.93	3337304	49.9	60	125	IS Fail

TuneStep	TuneFile
1	he.u
2	nogas.u

Sample Report

Sample Name	0.5 ppb (LLCV)	Data File Name	032SMPL.D
DataPath	D:\ICPMH\1\DATA\6-12-14.b	AcqDate	6/12/2014 15:18
Type	Sample	VialNumber	1102
Dilution	1	Comment	
Operator	EScarbrough	ISTDRefDataFileName	002CALB.D
SamplePassFail	Fail	ISTD PassFail	Pass

QC Analyte Table

Element	m/z	ISTD	Tune Step	Meas Value	FinalConcentration	Units	High Value	QC Flag
Cr	52	45	1	0.50	0.50	ppb	500	
Cd	111	115	2	0.62	0.62	ppb	500	
Pb	208	209	2	0.56	0.56	ppb	500	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Recovery	Lower Limit	Upper Limit	QC Flag
Sc	45	1	16490	1.53	44027	37.5	60	125	IS Fail
Sc	45	2	596909	0.59	1790401	33.3	60	125	IS Fail
Y	89	1	156362	0.56	355873	43.9	60	125	IS Fail
Y	89	2	1574228	0.52	3620799	43.5	60	125	IS Fail
In	115	1	239824	0.59	504494	47.5	60	125	IS Fail
In	115	2	1847261	0.59	3773528	49.0	60	125	IS Fail
Tb	159	2	2608132	0.94	5220780	50.0	60	125	IS Fail
Ho	165	2	2481085	1.18	5017508	49.4	60	125	IS Fail
Bi	209	1	789996	0.33	1355107	58.3	60	125	IS Fail
Bi	209	2	1724875	0.26	3337304	51.7	60	125	IS Fail

TuneStep	TuneFile
1	he.u
2	nogas.u

Continuing Calibration Verification (CCV) - US EPA Method 200.8

Sample Name CCV
DataPathName D:\ICPMH\1\DATA\6-12-14.b
Type 2-CCV
Dilution 1
Operator EScarbrough
SamplePassFail Fail

Data File Name 033SMPL.D
AcqDate 6/12/2014 15:25
VialNumber 1105
Comment
ISTD Ref File 002CALB.D
ISTD PassFail Pass

QC Analyte Table

Element	m/z	ISTD	TuneStep	Meas Value	Units	ExpValue	%Rec	QC1 Low	QC1 High	QC2 Low	QC2 High	QC Flag
Cr	52	45	1	94.76	ppb	100	94.8	85	115	90	110	
Cd	111	115	2	89.52	ppb	100	89.5	85	115	90	110	>+-10%
Pb	208	209	2	101.10	ppb	100	101.1	85	115	90	110	

QC ISTD Table

Element	m/z	Tune Step	CPS	%RSD	Reference CPS	%Rec	Lower Limit	Upper Limit	QC Flag
Sc	45	1	16622	0.97	44027	37.8	60	125	IS Fail
Sc	45	2	606660	0.17	1790401	33.9	60	125	IS Fail
Y	89	1	157577	1.44	355873	44.3	60	125	IS Fail
Y	89	2	1621718	0.33	3620799	44.8	60	125	IS Fail
In	115	1	243009	1.30	504494	48.2	60	125	IS Fail
In	115	2	1887641	0.21	3773528	50.0	60	125	IS Fail
Tb	159	2	2655417	0.52	5220780	50.9	60	125	IS Fail
Ho	165	2	2527344	0.39	5017508	50.4	60	125	IS Fail
Bi	209	1	801661	1.28	1355107	59.2	60	125	IS Fail
Bi	209	2	1762862	0.06	3337304	52.8	60	125	IS Fail

TuneStep	TuneFile
1	he.u
2	nogas.u

US TECHNOLOGY Georgia Department of Natural Resources

205 Butler Street, S.E., Suite 1162, Atlanta, Georgia 30334

Lonica C. Barrett, Commissioner
Environmental Protection Division

Harcia F. Renais, Director
404/656-2833

January 30, 1996

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Dave Bury
WR-ALC/EMR
216 Ocmulgee Court
Robins AFB, Georgia 31070-1040

RE: Recycling Spent Blast Media

Dear Mr Bury:

The Georgia Environmental Protection Division (EPD) has reviewed your October 30, 1995 letter regarding the spent plastic blast media (PBM) containing chromium and cadmium generated from aircraft paint removal operations. Based on the documentation provided by US Technology Corporation, Georgia EPD concurs that the spent PBM meets the requirements under 40 CFR 261.2(f) as an effective substitute for calcium carbonate in the manufacture of bathroom fixtures.

Please be advised that if the spent PBM is handled in a manner inconsistent with the exemption or a change in the Rules eliminates the exemption, the spent PBM would be subject to Georgia's Rules for Hazardous Waste Management. If you have any questions regarding this matter, please contact Danny Heater at 404-656-2833.

Sincerely,


Jim Usery
Program Manager
Hazardous Waste Management Branch

File: RAFB(R)
c:\data\rafb\memo\pchs\sup1295



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8980

MAR 02 2001

4WD-RCRA

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Raymond F. Williams
President
US Technology Corporation
220 Seventh Street, S.E.
Canton, Ohio 44702

SUBJ: Poly-Pacific International Inc. Recycling Program

Dear Mr. Williams:

The purpose of this letter is to provide you with an interim response to your letter of February 15, 2001, in which you make three requests of the United States Environmental Protection Agency (EPA), Region 4. EPA understands and appreciates your concerns and desire to prevent harm to human health and the environment from the recycling of hazardous materials. Specifically, you have expressed concerns and shared information about the recycling program of Poly-Pacific International Inc., of Canada (PPII).

EPA has reviewed information received from you and others, and is awaiting final results of independent analyses, in order to determine whether the opinion stated in the letter, dated April 9, 1997, is correct. As you know, states have the authority to establish more stringent requirements than those of EPA, and the April 9, 1997 letter makes it clear that PPII should contact the environmental office in each state prior to marketing the product of the recycling program in that state. All of the States in Region 4 are authorized to implement the recycling regulations in 40 C.F.R. Parts 260 and 261, including decisions on what is excluded from the definition of solid waste.

Your first request was "that Region 4 E.P.A. immediately notify Poly Pacific International Inc. that the April 4, 1997 letter cannot be used as an approval by Region 4 because it was not based on a full description of the process."

EPA has notified PPII that its process is being studied, because various people had expressed concerns and asked EPA to take another look at the recycling program. EPA must have final results, independently obtained, before making a final decision on whether to change its position on the PPII recycling program. Also, as stated above, EPA's position is not binding on the states.

Internet Address (URL) • <http://www.epa.gov>

Recycled/Recyclable • Printed with Vegetable Oil Based Inks on Recycled Paper (Minimum 30% Postconsumer)

Your second request was "that Region 4 E.P.A. determine that heavy metals and/or pesticides incorporated into fence posts are toxics along for the ride."

EPA, Region 4 agreed with the requesting companies, in April 1996 and April 1997, that the paint chips, containing heavy metals, in spent plastic blasting media performed the useful function of providing pigmentation in the final product. Final results of an independent study of the pesticide issue should be available this month.

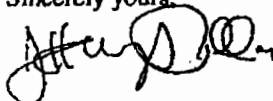
Your third request was "that Region 4 E.P.A. determine that fence post made to be permanently embedded below ground is 'application against the land in a manner constituting disposal' consistent with the determinations of Region 8 and 9."

EPA, Region 4, continues to believe that use of fence posts made from secondary materials is not use constituting disposal, because, unlike fertilizers and road-bed materials, there is only incidental land placement. It is not uncommon to have differing interpretations of RCRA regulations, and in this instance, the Regions and states appear to be split about equally in classifying this recycling process as use constituting disposal. Region 4 respects the different opinions, and that is one reason for obtaining independent study results.

To summarize, EPA, Region 4 appreciates your concerns. Everything necessary to protect human health and the environment is being done and will continue to be done.

Please contact Judy Sophianopoulos at (404) 562-8604, if you have questions or would like additional information.

Sincerely yours,



Jeffrey T. Pallas, Chief
South RCRA Enforcement and Compliance
Section
RCRA Enforcement and Compliance Branch



STATE OF MISSISSIPPI
DAVID RONALD MUSGROVE, GOVERNOR
MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY
CHARLES H. CHISOLM, EXECUTIVE DIRECTOR

June 18, 2001

Raymond F. Williams, President
US Technology Corporation
220 Seventh Street, S.E.
Canton, Ohio 44702

Dear Mr. Williams:

Re: Request for regulatory determination

This is a response to your request for regulatory applicability determination on the use of spent plastic abrasives for the manufacture of various products. A letter of approval had previously been sent to you on April 14, 1992.

According to the information submitted, the source of the spent abrasives is mainly from commercial and the U.S. military's operations of pressure blasting aircraft for paint removal. The abrasives contain plastic and other blast media, such as glass, aluminum oxide, garnet, Starblast and copper or iron slag, as well as paint residue, which may contain chromium, lead, and cadmium. This material is used as filler and/or colorant in the finished products. The products are manufactured using a polymer matrix, the spent abrasives, and other virgin products as needed. There is reportedly no reclamation of the spent abrasives prior to their being introduced to the manufacturing process.

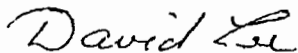
It appears that the same hazardous waste regulatory exemption applies today as in 1992, namely the exemption in Mississippi Hazardous Waste Regulations (MHWMR) 261.2 (e)(1). This exemption is applicable as long as the material is not reclaimed prior to being used in the process. Simple screening to segregate the material based on particle size or remove foreign materials is not considered reclamation. Provided the criteria of this exemption are met, the spent abrasives are not considered solid waste, and therefore are not hazardous waste.

1 of 2

Any use of the spent abrasives must adhere to the requirements of speculative accumulation, as stated in MHWMR 261.1(c)(8) and 261.2(c)(4). Any company using the abrasives in Mississippi must keep documentation to demonstrate that the materials are not being accumulated speculatively (i.e.-during a calendar year, using at least 75% by weight or volume of the material accumulated at the beginning of the calendar year). Additionally, since the spent abrasives contain hazardous constituents, they may not be stored in the open where they could be subject to being contained in stormwater runoff. Storage should be in drums, tanks, bins, silos, enclosed buildings, or equivalent enclosures.

I hope this response answers your questions about the applicability of the MHWMR to this material. If you have further questions, feel free to contact me.

Sincerely



David E. Lee, P.E., Chief
Timber Branch, Compliance Division

cc: Jimmy Palmer; Butler, Snow, O'Mara, Stevens, & Cannada, PLLC



STATE OF MISSISSIPPI
DAVID RONALD MUSGRAVE, GOVERNOR
MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY
CHARLES H. CHISOLM, EXECUTIVE DIRECTOR

December 20, 2001

Gene Pridemore
Hydromex, Inc.
P. O. Box 1514
Yazoo City, MS 39194

Dear Mr. Pridemore:

Re: Regulatory status of Hydromex products

This is a response to your inquiry concerning the regulatory status of Hydromex products that are placed on the ground for their intended use. In my letter to Ray Williams, dated June 18, 2001, I explained the exemption from the hazardous waste regulations for materials that are used in an industrial process to make a product. This letter did not address the issue of placing the manufactured products on the ground.

Recently there have been varying interpretations of whether products made from spent materials may be placed on the land. The applicable section of the Mississippi Hazardous Waste Management Regulations is 261.2(c)(2)(i). This text states that materials that are applied to the land may be solid waste (and therefore possibly hazardous waste); even if the use or reuse involves recycling. The term 'applied to the land' has had varying interpretations by EPA and the states. Some sources have interpreted this section of the regulations to mean that any produced material that contacts the ground in any manner falls under the scope of the rules. EPA Region IV takes the position that placement on the ground of certain manufactured products containing spent materials that may be hazardous is 'incidental' contact with the ground and not covered under the section referenced above. This interpretation appears to apply to products that have entrained the hazardous constituents in a matrix that is unlikely to leach into the surrounding soils in significant concentrations. This would be the case with the Hydromex products, since solidification with cement has long been recognized as an effective method of trapping constituents such as metals and greatly reducing their motility. This agency recognizes the Region IV interpretation of 'incidental' placement of such products, provided the finished products do not present a hazard to human health or the environment, as determined on a case-by-case basis. This determination would typically prohibit the use of spent materials containing highly toxic constituents that could be transferred to users of the product through skin absorption or inhalation. This agency would also be unlikely to approve uses of spent hazardous materials to make a product that is intended to be abraded into small particle size as it is used, which could expose users or the environment to the included hazardous constituents.

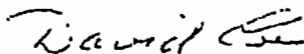
You stated that the spent materials you accept are normally non-hazardous per the TCLP test. If this is the case, the regulatory applicability issue is moot. The Mississippi Solid Waste Management Regulations do not address placement of manufactured products on the ground for their intended use. If you did accept some abrasives that failed the TCLP test and would be considered hazardous waste if disposed, the exemption in 261.2(e)(1)(i) would still be applicable, provided no changes were made to the material prior to use that could be considered reclamation under the regulations.

In summary, the Hydromex products, such as the levee mats, culverts, and other products that would be placed on or in the ground, are exempt from regulatory requirements of this agency, provided that:

- The spent abrasives used are non-hazardous, or
- The spent abrasives, if hazardous per the TCLP test, are used to make the finished products without first being reclaimed (excluding highly toxic and/or mobile constituents, as discussed in the second paragraph of this letter).

If you have further questions on this issue, feel free to contact me at 601.961.5377.

Sincerely



David E. Lee, P.E., Chief
Timber Branch, Compliance Division



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

JAN 09 1996

4WD-RCRA

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. G. Alan Perkins
Williams & Anderson
Twenty-Second Floor
111 Center Street
Little Rock, Arkansas 72201

SUBJ: Composite Leasing Corporation (Composite) Plastic Media
Blasting (PMB) Recycling Program

Dear Mr. Perkins:

The purpose of this letter is to respond to your letter on behalf of Composite, dated October 5, 1995, requesting confirmation of the regulatory exemption of recycled acrylic plastic dust resulting from the PMB of paints and coatings from aircraft and aircraft components. It is claimed, in your letter, that the PMB dust is used as an ingredient in an industrial process to make a product, without reclamation. As such, it should not be considered a solid waste. And, therefore, it is not subject to RCRA regulations.

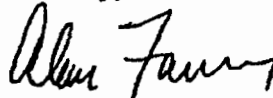
EPA reviewed the information provided and concluded that the presence of metals (chromium and cadmium), in the PMB dust, warranted further examination. It is stated in your letter that: *PMB dust product which consists of 96 to 99 percent acrylic plastic, sometimes exhibits the toxicity characteristic for chromium and/or cadmium due to the inclusion of minute paint chips.* EPA, by telephone, communicated its concern regarding this matter. Specifically, EPA requested additional supporting documentation and an explanation on the benefits provided by the paint chip impurities to the finished recycled product.

In your reply letter to EPA's request, dated November 29, 1995, you stated that the chromium and cadmium are contained in the pigments in the paint chips. These chips give the dust product a uniformly grayish color and opaque condition. Both these characteristics are important to the appearance of the recycled finished product. In order to achieve the color and opaqueness desired, without the benefit of PMB dust, the recycler must add pigments or pigmented material. The pigments added contain levels of chromium, cadmium, and/or other heavy metals, in similar or greater amounts than the PMB dust already contains.

After reviewing your letters and supporting documentation, EPA has determined that the PMB recycling process meets the requirements set forth in 40 CFR § 261.2(e)(1)(i). Therefore, within the management practices described in your documentation, the PMB dust is not considered a solid waste and is not subject to RCRA Regulations.

If you have any questions, please contact Mr. Carlos E. Merizalde, of my staff, at (404) 347-7603, ext. 6401.

Sincerely,



G. Alan Farmer
Chief, RCRA Branch
Waste Management Division

cc: Mr. Jerry B. Banks, MDEQ Director Hazardous Waste Division

**BEFORE THE MISSISSIPPI COMMISSION
ON ENVIRONMENTAL QUALITY**

**In The Matter Of: Recycling Activities of U.S. Technology Corporation at Hydromex,
Inc., Yazoo City, Mississippi**

**AMENDMENT TO
AGREED ORDER NO. 4614-03**

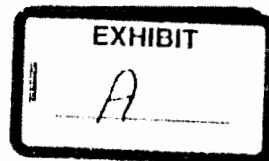
AGREED ORDER AMENDMENT

Mississippi Commission on Environmental Quality Agreed Order Number 4614-03, attached hereto as Exhibit "A," previously issued on July 18, 2003, in the above referenced matter, came on this day for reconsideration upon the joint request of the Mississippi Commission on Environmental Quality ("Commission") and U.S. Technology Corporation ("U.S. Technology"). The Executive Director of the Mississippi Department of Environmental Quality ("MDEQ"), having received information that the Commission has required and U.S. Technology has agreed to remediate the former Hydromex, Inc., site located at 700 Industrial Parkway, Yazoo City, Mississippi 39194 as discussed herein, finds that the requirements outlined in the above referenced Agreed Order should be amended as follows:

1.

Paragraph 3. of the above referenced Agreed Order shall be replaced with the following amended text:

3. U.S. Technology now seeks permission from the Commission to remediate the former Hydromex, Inc., site. The ultimate objective of this Agreed Order Amendment is to remediate the site to clean closure. As used in this document, the term "site" shall mean the former Hydromex, Inc., site located at 700 Industrial Parkway, Yazoo City, Mississippi 39194, as generally shown on the Site Survey



AGREED, this the 3 day of June, 2013.

FOR: U.S. TECHNOLOGY CORPORATION

BY (SIGNATURE): [Signature]

PRINTED NAME: Raymond F. Williams

TITLE: President

STATE OF OHIO

COUNTY OF STARK

Personally appeared before me, the undersigned authority in and for the jurisdiction aforesaid, the within named Raymond F. Williams, who acknowledged that he/she is the President (title) of U.S. Technology Corporation and that he/she is authorized to sign this agreement and to enter into this agreement on behalf of U.S. Technology Corporation.

SWORN TO AND SUBSCRIBED BEFORE ME, this the 3rd day of June 2013.

[Signature]
NOTARY PUBLIC

My Commission Expires:

7/28/2013



JILL L. ALDRIDGE
Notary Public, State of Ohio
My Commission Expires 7-28-13

Environmental Quality Order Number 4510-02), which remains a part of and incorporated within Agreed Order Number 4614-03.

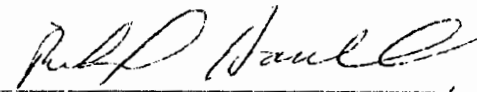
6.

U.S. Technology understands and acknowledges that it is entitled to an evidentiary hearing before the Commission pursuant to Mississippi Code Annotated section 49-17-31, and that it has made an informed waiver of that right.

ORDERED, this the 13 day of June, 2013.

FOR: MISSISSIPPI COMMISSION ON
ENVIRONMENTAL QUALITY

BY:


TRUDY D. FISHER
EXECUTIVE DIRECTOR
MISSISSIPPI DEPARTMENT OF
ENVIRONMENTAL QUALITY
*Director of
MDEQ Office
of Pollution Control*
*Authorized Signature
for Trudy Fisher*

applicable to activities at the site.

- V. U.S. Technology shall pay all necessary and reasonable costs of MDEQ's actions associated with MDEQ's administration and evaluation of the site in accordance with Mississippi Commission on Environmental Quality Agreed Order Number 5611-09, attached hereto as Exhibit "C," issued July 23, 2009, and any amendments thereto.

4.

Paragraph 4. of the above referenced Amendment to Agreed Order shall be replaced with the following amended text:

4. The execution of this Second Amendment to Agreed Order Amendment by U.S. Technology constitutes U.S. Technology's commitment to remediate the site to clean closure. The failure to honor that commitment, the modification of the process used at the site from that approved by this Second Amendment to Agreed Order or any other violation of the applicable provisions of the Second Amendment to Agreed Order, the Agreed Order Amendment or Agreed Order No. 4614-03 shall subject U.S. Technology to penalties of up to \$25,000 per day per violation pursuant to Mississippi Code Annotated section 49-17-43(1).

5.

All other provisions of Agreed Order Number 4614-03 and Amendment to Agreed Order No. 4614-03 remain unchanged, including Exhibit "1" (Mississippi Commission on

the MDOT site(s), disposal of the non-recyclable materials, over-excavation of the soil, and disposal of the over-excavated soil, U.S. Technology shall pay a stipulated penalty of \$5,000 per calendar week until such time as all of these specific obligations are met.

- S. If a natural disaster occurs, such as a hurricane, tornado, or flood, after mobilization at the site begins, thus interrupting or preventing operations, MDEQ and U.S. Technology will adjust the time of performance accordingly.
- T. All activities undertaken at the site by U.S. Technology or anyone acting on behalf of U.S. Technology (including, but not limited to, a disclosed agent, undisclosed agent, employee, or independent contractor) must conform to this Second Amendment to Agreed Order and, if it becomes necessary, the Post-Closure Plan, after such plans have been approved by MDEQ. Any deviation from this Second Amendment to Agreed Order must be approved in advance in writing by MDEQ on behalf of the Commission.
- U. All activities undertaken at the site by U.S. Technology or anyone acting on behalf of U.S. Technology (including, but not limited to, a disclosed agent, undisclosed agent, employee, or independent contractor) must comply with all federal, state, and local environmental laws and permits

migrate off-site. The Post-Closure Plan shall also provide for additional groundwater monitoring until it meets MCLs. Upon approval by MDEQ of U.S. Technology's Post-Closure Plan, U.S. Technology shall carry out the Post-Closure Plan at its expense.

- P. After the approval of U.S. Technology's Final Report or, if a Post-Closure Plan is necessary, after the completion of activities required by the Post-Closure Plan, MDEQ will issue an appropriate determination that no further corrective action on the property is required at that time. If cleanup standards change or additional data becomes available related to the property, then MDEQ will notify the appropriate parties of the need for any additional investigations or remedial actions. These actions will be consistent with MDEQ's need to protect human health, welfare, and the environment.
- Q. U.S. Technology shall have until December 31, 2013, to complete the processes of materials recovery, shipment and reuse of the recyclable materials to MDOT site(s), disposal of the non-recyclable materials, over-excavation of the soil, and disposal of the over-excavated soil.
- R. Upon failure to complete the processes of materials recovery, shipment and reuse of the recyclable materials to

4. Total volume and disposition of soil removed from the zones surrounding the recovered materials necessary to yield residual, in situ chemical concentrations not to exceed TCLP concentrations of 0.11 mg/l for Cadmium, 0.60 mg/l for Chromium, and 0.75 mg/l for Lead. U.S. Technology may analyze for total concentrations of each constituent and use the appropriate conversion factor to determine compliance with the TCLP concentrations.

5. All sampling and analytical data including QA/QC.

6. Closure summary of the site.

- D. If the groundwater sampling results indicate that groundwater concentrations of Cadmium or Chromium are above Maximum Contaminant Levels (MCLs) of 0.005mg/l and 0.1 mg/l, respectively, then within six (6) months of MDEQ's approval of U.S. Technology's Final Report, U.S. Technology shall prepare and submit a Post-Closure Plan for approval by MDEQ. The Post-Closure Plan shall set out U.S. Technology's plan to bring groundwater levels into compliance or shall demonstrate that groundwater concentrations above MCLs will not

GW
kshmy

MDEQ. Existing wells (if any) from prior onsite operations and determined by MDEQ to be functional will substitute for new wells.

- M. Once quarterly for a minimum of four (4) successive quarters, U.S. Technology shall take and analyze samples from the groundwater monitoring wells and submit the analytical results to MDEQ. The number of quarterly groundwater sampling events in excess of the first four (4) will be determined by MDEQ. Two weeks prior to each sampling event, U.S. Technology shall notify MDEQ of the sampling date and time. MDEQ may observe U.S. Technology's collecting of the samples and may take split samples. The first quarterly groundwater sampling event shall be conducted within fourteen (14) days of the installation of the groundwater monitoring wells.
- N. Within ninety (90) days of the final groundwater sampling event, U.S. Technology shall prepare and submit to MDEQ a Final Report including the following:

1. Total volume of materials recovered.
2. Total volume of materials determined to be recyclable and disposition.
3. Total volume and disposition of materials determined to be non-recyclable.

- I. The lab to be used by U.S. Technology for all sampling analysis shall be mutually agreed to in writing by MDEQ and U.S. Technology.
- J. In the event any sample fails TCLP testing for chromium, cadmium or lead, that volume shall be treated with additional Portland cement injection and retested by U.S. Technology until it passes TCLP limits.
- K. Upon recovery of materials from the site, U.S. Technology shall sample and analyze the surrounding horizontal and vertical soil matrix and over-excavate until residual levels do not exceed TCLP concentrations of 0.11 mg/l for Cadmium, 0.60 mg/l for Chromium, and 0.75 mg/l for Lead. U.S. Technology may analyze for total concentrations of each constituent and use the appropriate conversion factor to determine compliance with the TCLP concentrations. The sampling results shall be provided to MDEQ, and MDEQ may take split samples. U.S. Technology shall dispose of the over-excavated soil as approved by MDEQ.
- L. Within 60 days of completion of over-excavation of the soil, U.S. Technology shall install an appropriate number of onsite groundwater monitoring wells. The number, locations, and depths of these wells will be determined by

sub-base materials, shall be overlaid and thoroughly mixed consistent with IAW section 308.03.2 with the sub-base materials and sufficient water to properly hydrate the mixture. Curing shall last 7 days.

11. A sample shall be taken of the cured sub-base material by U.S. Technology in coordination with MDOT Engineering Division for each 1000 cubic yards of roadway sub-base for the initial six (6) sampling events. The sample results shall not exceed TCLP concentrations of 0.11 mg/l for Cadmium, 0.60 mg/l for Chromium and 0.75 mg/l for Lead. If all initial six (6) TCLP sampling results pass, U.S. Technology shall collect a sample of the cured sub-base material for each 2000 cubic yards of roadway sub-base for the next six (6) sampling events. If the next six (6) sampling results pass the appropriate limits, U.S. Technology shall collect a sample of the cured sub-base material for each 4000 cubic yards of roadway sub-base for the next six (6) sampling events. If these sampling results pass sampling limits, U.S. Technology shall collect a sample of the cured sub-base material for each 8000 cubic yards of roadway sub-base for the remainder of the project. U.S. Technology shall promptly provide MDEQ with all sampling results.

*Sampling
to meet
LDR*

the Mississippi Department of Transportation ("MDOT").

- C. All SBM shall be delivered to the MDOT construction site(s) in super sacks or covered dump trucks with controlled width and depth spreader mechanisms. If the SBM is delivered in super sacks, it shall be loaded into the spreader truck at the MDOT construction site for application on the other sub base materials.
- D. The SBM shall be assigned an appropriate layer within the ascribed layers of sub-base aggregate materials by the MDOT Engineering Division. The SBM shall be applied in a controlled thickness and width within the controlled confines of the sub-base area. The SBM shall comprise 10% of the sub-base materials.
- E. The building of the sub-base materials, compression, mixing, application and Portland cement controls shall be performed in compliance with MDOT Special Provision 907-308 attached as Exhibit "B".
- F. Sub-base materials shall be compressed to a density of 97% average by mechanical means prior to application of cement.
- G. Portland Cement, at 7% or at a sufficient quantity as directed by the MDOT Engineering Division to achieve a minimum 300 psi compressive strength of the combined

Do they do this

the Site Survey prepared by Lamar Warnack, P.S., and stamped September 11, 2009.

2.

Paragraph 3. of the above referenced Amendment to Agreed Order including subparagraphs A-BB shall be replaced with the following amended text:

3. The Commission now enters into this Second Amendment to Agreed Order and agrees with U.S. Technology that, within the context of the enforcement action begun by the Commission by the issuance of Order Number 4510-02 against Hydromex, Inc., U.S. Technology may remediate the site under the following conditions:

- A. On or before December 31, 2013, U.S. Technology shall remediate the site, including recovery, reuse, and recycling for the recyclable materials and recovery, sampling, and disposal for the non-recyclable materials. As used in this document, the term "materials" shall mean all materials at the site, including, but not limited to, spent blast media ("SBM"). This Second Amendment to Agreed Order provides additional time to U. S. Technology to remediate the site as the Amendment to Agreed Order (Notice to Proceed) provided U.S. Technology until June 9, 2013, to remediate the site.
- B. U.S. Technology will be allowed to utilize the processed SBM at the site as intermediate road base as approved by

**BEFORE THE MISSISSIPPI COMMISSION
ON ENVIRONMENTAL QUALITY**

**In The Matter Of: Recycling Activities of U.S. Technology Corporation at Hydromex,
Inc., Yazoo City, Mississippi**

**SECOND AMENDMENT TO
AGREED ORDER NO. 4614-03**

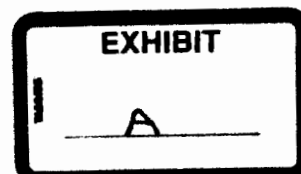
SECOND AGREED ORDER AMENDMENT

Mississippi Commission on Environmental Quality Amendment to Agreed Order Number 4614-03, attached hereto as Exhibit "A," previously issued on February 28, 2011, in the above referenced matter and, came on this day for reconsideration upon the joint request of the Mississippi Commission on Environmental Quality ("Commission") and U.S. Technology Corporation ("U.S. Technology"). The Executive Director of the Mississippi Department of Environmental Quality ("MDEQ"), having received information that the Commission has required and U.S. Technology has agreed to remediate the former Hydromex, Inc., site located at 700 Industrial Parkway, Yazoo City, Mississippi 39194 as discussed herein, finds that the requirements outlined in the above referenced Amendment to Agreed Order should be amended as follows:

1.

Paragraph 1. of the Amendment to Agreed Order shall be replaced with the following amended text:

1. U.S. Technology now seeks permission from the Commission to remediate the former Hydromex, Inc., site. The ultimate objective of this Second Amendment to Agreed Order is to remediate the site to clean closure. As used in this document, the term "site" shall mean the former Hydromex, Inc., site located at 700 Industrial Parkway, Yazoo City, Mississippi 39194, as generally shown on



AGREED, this the 22 day of April, 2014.

FOR: US TECHNOLOGY CORPORATION

BY (SIGNATURE) [Signature]

PRINTED NAME: Raymond F. Williams

TITLE: President

STATE OF Ohio

COUNTY OF Stark

Personally appeared before me, the undersigned authority in and for the jurisdiction aforesaid, the within named Raymond F. Williams, who acknowledged that he/she is the President (title) of US Technology Corporation and that he/she is authorized to sign this agreement and to enter into this agreement on behalf of US Technology Corporation.

SWORN TO AND SUBSCRIBED BEFORE ME THIS THE 22ND day of APRIL

2014.

[Signature]
NOTARY PUBLIC

My Commission Expires:

7/29/2018



JILL L. ALDRIDGE
Notary Public, State of Ohio
My Commission Expires 7/29/18

9.

Nothing contained in this Third Amendment to Agreed Order shall limit the rights of MDEQ or the Commission to take enforcement or other actions against Respondent for violations not addressed herein and for future violations of environmental laws, rules and regulations.

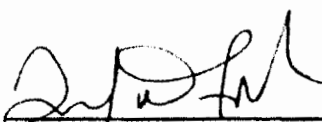
10.

US Technology understands and acknowledges that it is entitled to an evidentiary hearing before the Commission pursuant to Mississippi Code Annotated §49-17-31, and that it has made an informed waiver of that right.

ORDERED, this the 23 day of April, 2014.

FOR: MISSISSIPPI COMMISSION ON
ENVIRONMENTAL QUALITY

BY:



TRUDY D. FISHER

EXECUTIVE DIRECTOR
MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY

violation of the applicable provisions of the Second Amendment to Agreed Order, the Agreed Order Amendment or Agreed Order No. 4614 03 shall subject US Technology to penalties of up to \$25,000 per day per violation pursuant to Mississippi Code Annotated section 49-17-43(1).

6.

The parties agree that by entering into this Third Amendment to Agreed Order Amendment, US Technology does not admit the truth of any allegation in this Third Amendment to Agreed Order, and without any admission of liability by US Technology, US Technology consents to the entry of this Third Amendment to Agreed Order resolving the claims of the Commission addressed herein. At the same time, the parties agree that the Commission continues to allege that the matters addressed herein are violations as expressed herein.

7.

All other provisions of Agreed Order Number 4614 03, Amendment to Agreed Order No. 4614-03 and the Second Amendment to Agreed Order No. 4614 03 remain unchanged, including Exhibit "I" (Mississippi Commission on Environmental Quality Order Number 4510 02), which remains a part of and incorporated within Agreed Order Number 4614 03.

8.

Nothing in this Third Amendment to Agreed Order shall limit the rights of MDEQ or the Commission in the event US Technology fails to comply with this Third Amendment to Agreed Order. The Third Amendment to Agreed Order shall be strictly construed to those matters expressly resolved herein.

- (j) All activities undertaken at the site by US Technology or anyone acting on behalf of US Technology (including, but not limited to, a disclosed agent, undisclosed agent, employee, or independent contractor) must conform to this Third Amendment to Agreed Order and, if it becomes necessary, the Post-Closure Plan, after such plans have been approved by MDEQ.
 - (k) Any deviation from this Third Amendment to Agreed Order must be approved in advance in writing by MDEQ on behalf of the Commission.
 - (l) All activities undertaken at the site by US Technology or anyone acting on behalf of US Technology (including, but not limited to, a disclosed agent, undisclosed agent, employee, or independent contractor) must comply with all federal, state and local environmental laws and permits applicable to activities at the site.
 - (m) US Technology shall pay all necessary and reasonable costs of MDEQ's actions associated with MDEQ's administration and evaluation of the site in accordance with Mississippi Commission on Environmental Quality Agreed Order Number 5611-09, attached hereto as Exhibit "C", issued July 23, 2009, and any amendments thereto.
- (3) Paragraph 4 of the above referenced Second Amendment to Agreed Order shall be replaced with the following amended text:
- The execution of this Third Amendment to Agreed Order by US Technology constitutes US Technology's commitment to remediate the site to clean closure. The failure to honor that commitment, the modification of the process used at the site from that approved by this Third Amendment to Agreed Order or any other

Approval of
Post-Closure

of US Technology's Post-Closure Plan, US Technology shall carry out the Post-Closure Plan at its expense.

- (f) After the approval of US Technology's Final Report or, if a Post-Closure Plan is necessary, after the completion of activities required by the Post-Closure Plan, MDEQ will issue an appropriate determination that no further corrective action on the property is required at that time. If cleanup standards change or additional data becomes available related to the property, then MDEQ will notify the appropriate parties of the need for any additional investigations or remedial actions. These actions will be consistent with MDEQ's need to protect human health, welfare, and the environment.
- (g) US Technology shall have 180 days from the Execution Date of this Third Amendment to Agreed Order, to complete disposal of the wastes, over-excavation of the soil, and disposal of the over-excavated soil.
- (h) Upon failure to complete the required disposal of the wastes including SBM, over-excavation of the soil, and disposal of the over-excavated soil within 180 days from the Execution Date of this Third Amendment to Agreed Order, US Technology shall pay a stipulated penalty of \$5,000 per calendar week until such time as all of these specific obligations are met.
- (i) If a natural disaster occurs, such as a hurricane, tornado, or flood, after mobilization at the site begins, thus interrupting or preventing operations, MDEQ and US Technology will adjust the time of performance accordingly.

conducted within fourteen (14) days of the installation of the groundwater monitoring wells.

- (d) Within ninety (90) days of the final groundwater sampling event, US Technology shall prepare and submit to MDEQ a Final Report including the following:

1. Total volume/mass of wastes removed from the Hydromex site. *reporting*
2. Total volume/mass and disposition of soil removed from the zones surrounding the recovered wastes necessary to yield residual, in situ chemical concentrations not to exceed Mississippi TRG standards.
3. All sampling and analytical data including QA/QC.
4. Closure summary of the site.

- (e) If the groundwater sampling results indicate that groundwater concentrations of Cadmium or Chromium are above Maximum Contaminant Levels (MCLs) of 0.005mg/l and 0.1 mg/l, respectively, then within six (6) months of MDEQ's approval of US Technology's Final Report, US Technology shall prepare and submit a Post-Closure Plan for approval by MDEQ. The Post-Closure Plan shall set out US Technology's plan to bring groundwater levels into compliance or shall demonstrate that groundwater concentrations above MCLs will not migrate off-site. The Post-Closure Plan shall also provide for additional groundwater monitoring until it meets MCLs. Upon approval by MDEQ

GW results
MCL

~~Cd~~ - 0.005 mg/L

Cr - 0.1 mg/L

↓ above

Post-Closure Plan

[Handwritten signature]

enforcement action begun by the Commission by the issuance of Order 4510-02 against Hydromex, Inc., US Technology Corporation shall remediate the site under the following conditions:

(a) Upon recovery of wastes from the site, US Technology shall sample and analyze the surrounding horizontal and vertical soil matrix and over-excavate until residual levels do not exceed Mississippi TRG standards. The sampling results shall be provided to MDEQ, and MDEQ may take split samples. US Technology shall dispose of the over-excavated soil as approved by MDEQ.

(b) Within 90 days of the Execution Date of this Third Amendment to Agreed Order, US Technology shall install an appropriate number of onsite groundwater monitoring wells. The number, locations, and depths of these wells will be determined by MDEQ. Existing wells (if any) from prior onsite operations and determined by MDEQ to be functional will substitute for new wells. *GW wells*

(c) Once quarterly for a minimum of four (4) successive quarters, US Technology shall take and analyze samples from the groundwater monitoring wells and submit the analytical results to MDEQ. The number of quarterly groundwater sampling events in excess of the first four (4) will be determined by MDEQ. Two weeks prior to each sampling event, US Technology shall notify MDEQ of the sampling date and time. MDEQ may observe US Technology's collecting of the samples and may take split samples. The first quarterly groundwater sampling event shall be *GW samples*

UWA

restrictions ("LDR") standards before transportation and disposal of the treated material.

C. US Technology Corporation agrees not to ship any additional wastes to Mississippi.

D. To accomplish the remaining remediation of the Hydromex site, the Commission requires and US Technology Corporation agrees to amend the requirements of the Second Amendment to Agreed Order No. 4614 03 issued June 13, 2013, as follows:

- (1) Paragraph 1 of the Second Amendment to Agreed Order 4614 03 shall be replaced with the following amended text:

US Technology now seeks permission from the Commission to remediate the former Hydromex, Inc., site. The ultimate objective of this Third Amendment to Agreed Order is to remediate the site to clean closure. As used in this document, the term "site" shall mean the former Hydromex, Inc. site located at 700 Industrial Parkway, Yazoo City, Mississippi 39194, as generally shown on the Site Survey prepared by Lamar Warmack, P.S., and stamped September 11, 2009.

- (2) Paragraph 2 of the above referenced Second Amendment to Agreed Order including subparagraphs A-V shall be replaced with the following amended text:

The Commission now enters into this Third Amendment to Agreed Order and agrees with US Technology that, within the context of the

In lieu of a formal enforcement hearing concerning the violations list above, Complainant and US Technology agree to settle this matter as follows:

- A. US Technology agrees to pay and Complainant agrees to accept a civil penalty in the amount of \$45,000 consistent with the stipulated penalty provision in Section 2.R. of the Second Amendment to Agreed Order. US Technology shall pay to MDEQ \$22,500 within forty five (45) days after the date this Agreed Order Amendment is executed by the MDEQ Executive Director, or her designee (the "Execution Date"). US Technology Corporation shall pay the remaining \$22,500 to MDEQ on or before October 15, 2014. The settlement payments above shall be submitted to the following address:

Mississippi Department of Environmental Quality
Attn: Jennifer Parish
P.O. Box 2339
Jackson, MS 39225

- B. US Technology further agrees to treat and dispose of the remaining approximately 7 million pounds of wastes including SBM and contaminated soil at the Hydromex site in strict compliance with the Treatment and Disposal Workplan submitted by US Technology Corporation through correspondence to MDEQ dated March 7, 2014, with the exception of the additional requirement provided below. A copy of the Treatment and Disposal Workplan, which is incorporated herein by reference, is attached as Exhibit "B". In addition to the Treatment and Disposal plan requirements, US Technology must treat the wastes at the site to meet federal land disposal

Respondent was a violation of the Second Amendment to Agreed Order Number 4614-03 previously issued on June 13, 2013, in the above referenced matter and attached hereto as Exhibit "A". Approximately 7,000,000 pounds of the wastes remain on location at the Hydromex site.

2.

Sections 2.B., 2.Q., 2.R., 2.T. and 4. of the Second Amendment to Agreed Order No. 4614 03 specifically require that US Technology utilize the processed SBM as intermediate road base as approved by the Mississippi Department of Transportation ("MDOT") at MDOT(s) site(s) and to properly dispose of the materials by December 31, 2013.

3.

Additionally Section 2.T of the Second Amendment to Agreed Order 4614 03 specifically requires any deviation from the Second Amendment be approved in advance in writing by MDEQ on behalf of the Commission.

4.

In violation of Sections 2.B., 2.Q., 2.R., 2.T. and 4. of the Second Amendment to Agreed Order No. 4614 03, US Technology Corporation has failed to use the SBM at the MDOT site(s) and did not properly dispose of the remaining material by December 31, 2013; and further, US Technology did not seek or gain approval in advance from MDEQ prior to shipping approximately 9,075,722 pounds of wastes including SBM to Missouri.

BEFORE THE MISSISSIPPI COMMISSION
ON ENVIRONMENTAL QUALITY

MISSISSIPPI COMMISSION ON
ENVIRONMENTAL QUALITY

COMPLAINANT

VS.

THIRD AMENDMENT TO AGREED ORDER NO. 4614 03

US TECHNOLOGY CORPORATION

RESPONDENT

In The Matter Of: Recycling Activities of U.S. Technology Corporation at Hydromex, Inc.,
Yazoo City, Mississippi

THIRD AGREED ORDER AMENDMENT

COMES NOW the Mississippi Commission on Environmental Quality Commission ("Commission") acting through the staff of the Mississippi Department of Environmental Quality ("MDEQ"), Complainant, and US Technology Corporation, Respondent, in the above captioned cause and agree as follows:

1.

In October and November, 2013, US Technology Corporation shipped via truck approximately 9,075,722 pounds of wastes including Spend Blast Media ("SBM") from the Hydromex site located at 700 Industrial Parkway, Yazoo City, Mississippi, 39194, to Missouri Green Materials ("MGM") without obtaining the required approval from MDEQ. This action by

prepared by Lamar Warnack, P.S., and stamped September 11, 2009.

2.

Paragraph 4. of the above referenced Agreed Order shall be removed.

3.

Paragraph 5. of the above referenced Agreed Order shall be replaced with the following amended text:

5. The Commission now enters into this Agreed Order Amendment and agrees with U.S. Technology that, within the context of the enforcement action begun by the Commission by the issuance of Order Number 4510-02 against Hydromex, Inc., U.S. Technology may remediate the site under the following conditions:

- A. Within thirty (30) days of the execution of this Amendment to Agreed Order Number 4614-03, U.S. Technology shall submit a Site Remediation Plan to MDEQ for approval. The Site Remediation Plan shall detail all aspects of U.S. Technology's plan to remediate the site, including recovery, reconstitution, and recycling for the recyclable materials and recovery, sampling, and disposal for the non-recyclable materials. As used in this document, the term "materials" shall mean all materials at the site, including, but not limited to, spent blast media ("SBM").
- B. After MDEQ approves U.S. Technology's Site Remediation Plan, U.S. Technology shall obtain all necessary

environmental permits.

- C. MDEQ will undertake and complete whatever public notice or other procedures are required before U.S. Technology may initiate remediation operations at the site. When these procedures run their course, MDEQ will give U.S. Technology a written Notice to Proceed.
- D. U.S. Technology shall use its own forces and equipment, and such contractors as might be necessary, to carry out the operations described in its Site Remediation Plan.
- E. Recyclable materials that are recovered from the site shall be reconstituted onsite by drying, if necessary, and crushing, grinding, and grading using rock crushers, hammer mills, and sieve shakers to ensure particle uniformity and acceptable size distribution for use as feedstock in the manufacture of beneficial products at a manufacturing facility designated by U.S. Technology.
- F. After recovery and reconstitution, the recyclable materials shall be containerized and held in dry storage onsite, pending shipment to the designated manufacturing facility. Shipment rates to this facility shall be controlled by the production capacity of the facility.
- G. Recyclable materials recovered at the site shall be used as an

ingredient in the manufacture of either (1) cast concrete architectural or masonry blocks, or (2) cast concrete blocks that will be used in the construction of articulated revetment mattresses for bank stabilization purposes.

- H. U.S. Technology shall, through its recycling contracts, specifically require, as a condition of sales and distribution, that blocks manufactured for bank stabilization projects be (1) placed only in locations above the ordinary mean high water mark, where the blocks would be subject to only infrequent wetting, and not permanently submerged and (2) marked in a manner indicating that SBM was used in the manufacturing of the blocks.
- I. Blocks made for normal architectural/construction purposes shall conform to the structural requirements of ASTM C90 or equivalent and shall meet industry, EPA, and OSHA standards for commercial products. Blocks made for use in bank stabilization projects shall conform to the structural requirements and specifications prescribed by the U. S. Army Corps of Engineers. U.S. Technology shall conduct representative sampling sufficient to demonstrate that the blocks meet the applicable structural requirements and standards or specifications. Upon MDEQ's request, U.S.

Technology shall report its sampling results to MDEQ.

- J. Upon MDEQ's request, U.S. Technology shall perform TCLP analyses on the blocks and report its results to MDEQ. The blocks shall not exceed TCLP concentrations of 1.0 mg/l for Cadmium, 5.0 mg/l for Chromium, and 5.0 mg/l for Lead. U.S. Technology may analyze for total concentrations of each constituent and use the appropriate conversion factor to determine compliance with the TCLP concentrations.
- K. Any blocks made with SBM that do not meet the requirements set out above shall be crushed and reintroduced into the recycling process.
- L. U.S. Technology shall prepare and, upon MDEQ's request, submit to MDEQ a report including the following information regarding block production:
 - 1. Number of blocks produced as of the date of the report.
 - 2. Number of blocks stored at the designated manufacturing facility as of the date of the report.
 - 3. Number of blocks moved offsite from the designated manufacturing facility as of the date of the report.
- M. Nothing in this Agreed Order Amendment shall limit the

Commission's authority to issue an additional Order prohibiting the production of additional blocks until the blocks stored at the designated manufacturing facility are delivered to a purchaser.

- N. All materials deemed by MDEQ to be non-recyclable shall be evaluated, at U.S. Technology's expense, for appropriate disposition as determined by MDEQ. The sampling results shall be provided to MDEQ, and MDEQ may take split samples. U.S. Technology shall then dispose of the non-recyclable materials as approved by MDEQ.
- O. The lab to be used by U.S. Technology for all sampling analysis shall be mutually agreed to in writing by MDEQ and U.S. Technology.
- P. Upon commencement of operations at the site, U.S. Technology shall submit to MDEQ a monthly report within 30 days of the end of each month covering the following:
 - 1. Monthly and cumulative volumes of materials recovered.
 - 2. Monthly and cumulative volumes of materials determined to be recyclable.
 - 3. Monthly and cumulative volumes and disposition of materials determined to be non-recyclable.

4. Monthly and cumulative volumes of reconstituted materials held onsite in dry storage, pending shipment to the designated manufacturing facility.

5. Monthly and cumulative volumes of reconstituted materials shipped to the designated manufacturing facility.

6. Monthly and cumulative number of blocks manufactured for bank stabilization projects and the final destination of these blocks.

7. Sampling results for the non-recyclable materials.

Q. Upon recovery of materials from the site, U.S. Technology shall sample and analyze the surrounding horizontal and vertical soil matrix and over-excavate until residual levels do not exceed TCLP concentrations of 1.0 mg/l for Cadmium, 5.0 mg/l for Chromium, and 5.0 mg/l for Lead. U.S. Technology may analyze for total concentrations of each constituent and use the appropriate conversion factor to determine compliance with the TCLP concentrations. The sampling results shall be provided to MDEQ, and MDEQ may take split samples. U.S. Technology shall dispose of the over-excavated soil as approved by MDEQ.

R. Within 60 days of completion of over-excavation of the soil,

U.S. Technology shall install an appropriate number of onsite groundwater monitoring wells. The number, locations, and depths of these wells will be determined by MDEQ. Existing wells (if any) from prior onsite operations and determined by MDEQ to be functional will substitute for new wells.

- S. Once quarterly for a minimum of four (4) successive quarters, U.S. Technology shall take and analyze samples from the groundwater monitoring wells and submit the analytical results to MDEQ. The number of quarterly groundwater sampling events in excess of the first four (4) will be determined by MDEQ. Two weeks prior to each sampling event, U.S. Technology shall notify MDEQ of the sampling date and time. MDEQ may observe U.S. Technology's collecting of the samples and may take split samples. The first quarterly groundwater sampling event shall be conducted within fourteen (14) days of the installation of the groundwater monitoring wells.
- T. Within ninety (90) days of the final groundwater sampling event, U.S. Technology shall prepare and submit to MDEQ a Final Report including the following:

1. Total volume of materials recovered.
2. Total volume of materials determined to be

recyclable and shipped to the designated manufacturing facility after onsite reconstitution and temporary storage.

3. Number and final destination of blocks manufactured for bank stabilization projects.

4. Total volume and disposition of materials determined to be non-recyclable.

5. Total volume and disposition of soil removed from the zones surrounding the recovered materials necessary to yield residual, in situ chemical concentrations not to exceed 'TCLP' concentrations of 1.0 mg/l for Cadmium, 5.0 mg/l for Chromium, and 5.0 mg/l for Lead. U.S. Technology may analyze for total concentrations of each constituent and use the appropriate conversion factor to determine compliance with the TCLP concentrations.

6. All sampling and analytical data including QA/QC.

7. Closure summary of the site.

U. If the groundwater sampling results indicate that groundwater concentrations of Cadmium or Chromium are above Maximum Contaminant Levels (MCLs) of 0.005mg/l and 0.1 mg/l, respectively, then within six (6) months of MDEQ's

approval of U.S. Technology's Final Report, U.S. Technology shall prepare and submit a Post-Closure Plan for approval by MDEQ. The Post-Closure Plan shall set out U.S. Technology's plan to bring groundwater levels into compliance or shall demonstrate that groundwater concentrations above MCLs will not migrate off-site. The Post-Closure Plan shall also provide for additional groundwater monitoring until it meets MCLs. Upon approval by MDEQ of U.S. Technology's Post-Closure Plan, U.S. Technology shall carry out the Post-Closure Plan at its expense.

- V. After the approval of U.S. Technology's Final Report or, if a Post-Closure Plan is necessary, after the completion of activities required by the Post-Closure Plan, MDEQ will issue an appropriate determination that no further corrective action on the property is required at that time. If cleanup standards change or additional data becomes available related to the property, then MDEQ will notify the appropriate parties of the need for any additional investigations or remedial actions. These actions will be consistent with MDEQ's need to protect human health, welfare, and the environment.
- W. U.S. Technology shall have two (2) calendar years, from the

date of the MDEQ Notice to Proceed, to complete the processes of materials recovery, onsite reconstitution, shipment of the recyclable materials to the designated manufacturing facility, disposal of the non-recyclable materials, over-excavation of the soil, and disposal of the over-excavated soil.

- X. Upon failure, within the two-year period of performance, to complete the processes of materials recovery, onsite reconstitution, shipment of the recyclable materials to the designated manufacturing facility, disposal of the non-recyclable materials, over-excavation of the soil, and disposal of the over-excavated soil, U.S. Technology shall pay a stipulated penalty of \$5,000 per calendar week until such time as all of these specific obligations are met.
- Y. If a natural disaster occurs, such as a hurricane, tornado, or flood, after mobilization at the site begins, thus interrupting or preventing operations, MDEQ and U.S. Technology will adjust the time of performance accordingly.
- Z. All activities undertaken at the site by U.S. Technology or anyone acting on behalf of U.S. Technology (including, but not limited to, a disclosed agent, undisclosed agent, employee, or independent contractor) must conform to this Agreed Order

Amendment and to the Site Remediation Plan and, if it becomes necessary, the Post-Closure Plan, after such plans have been approved by MDEQ. Any deviation from this Agreed Order Amendment, the Site Remediation Plan, or the Post-Closure Plan must be approved in advance in writing by MDEQ on behalf of the Commission.

- AA. All activities undertaken at the site by U.S. Technology or anyone acting on behalf of U.S. Technology (including, but not limited to, a disclosed agent, undisclosed agent, employee, or independent contractor) must comply with all federal, state, and local environmental laws and permits applicable to activities at the site.
- BB. U.S. Technology shall pay all necessary and reasonable costs of MDEQ's actions associated with MDEQ's administration and evaluation of the site in accordance with Mississippi Commission on Environmental Quality Agreed Order Number 5611-09, attached hereto as Exhibit "B," issued July 23, 2009, and any amendments thereto.

4.

Paragraph 10. of the above referenced Agreed Order shall be replaced with the following amended text:

- 10. The execution of this Agreed Order Amendment by U.S. Technology

constitutes U.S. Technology's commitment to remediate the site to clean closure. The failure to honor that commitment, the modification of the process used at the site from that approved by this Agreed Order Amendment and prescribed in the above referenced Site Remediation Plan without prior approval of the Commission, or any other violation of the provisions of this Agreed Order Amendment shall subject U.S. Technology to penalties of up to \$25,000 per day per violation pursuant to Mississippi Code Annotated section 49-17-43(1).

5.

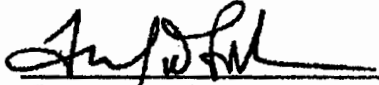
All other provisions of Agreed Order Number 4614-03 remain unchanged, including Exhibit "1" (Mississippi Commission on Environmental Quality Order Number 4510-02), which remains a part of and incorporated within Agreed Order Number 4614-03.

6.

U.S. Technology understands and acknowledges that it is entitled to an evidentiary hearing before the Commission pursuant to Mississippi Code Annotated section 49-17-31, and that it has made an informed waiver of that right.

ORDERED, this the 28 day of February, 2011.

FOR: MISSISSIPPI COMMISSION ON
ENVIRONMENTAL QUALITY

BY: 
TRUDY D. FISHER
EXECUTIVE DIRECTOR
MISSISSIPPI DEPARTMENT OF
ENVIRONMENTAL QUALITY

AGREED, this the 24th day of February, 2011.

FOR: U.S. TECHNOLOGY CORPORATION

BY (SIGNATURE): [Signature]

PRINTED NAME: Raymond E. Williams

TITLE: President

STATE OF Nevada

COUNTY OF Clark

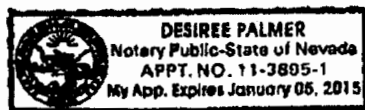
Personally appeared before me, the undersigned authority in and for the jurisdiction
aforesaid, the within named Raymond Williams, who acknowledged that he/she is
the President (title) of U.S. Technology Corporation and that he/she is
authorized to sign this agreement and to enter into this agreement on behalf of U.S. Technology
Corporation.

SWORN TO AND SUBSCRIBED BEFORE ME, this the 24 day of February, 2011.

[Signature]
NOTARY PUBLIC

My Commission Expires:

January 5, 2015



BEFORE THE COMMISSION ON ENVIRONMENTAL QUALITY

In The Matter Of: Recycling Activities of U.S. Technology Corporation at Hydromex, Inc.,
Yazoo City, Mississippi

ORDER NO. **4614** **03**

JUL 17 2003

AGREED ORDER

COME NOW the Mississippi Commission on Environmental Quality ("Commission") and U.S. Technology Corporation ("U.S. Technology") in the above-captioned cause and agree as follows:

1. Hydromex, Inc., located at 800 Industrial Parkway, Yazoo City, Mississippi, 39194, ("Hydromex") currently is under a cease and desist order issued by the Commission, Order No. 4510-02 (November 14, 2002). A copy of that Order is attached to this Agreed Order as Exhibit 1.

2. U.S. Technology, whose main office is located at 1446 W. Tuscarawas St., Canton, Ohio, 44702, shipped to Hydromex much of the spent abrasive blast material that has been received at and handled by Hydromex. According to information provided to the Mississippi Department of Environmental Quality ("MDEQ"), all material received by Hydromex was to be either nonhazardous or was to be handled and recycled in such a manner as to qualify the material for the "recycling exclusion" from the definition of solid waste contained in 40 C.F.R. § 261.2(e). Information received and collected by MDEQ indicates that, instead, much of the material received and handled by Hydromex was handled in an improper manner, including, but not limited to, the failure to process



material and processing that does not constitute proper recycling under 40 C.F.R. § 261.2(e). Much of this material remains at the Hydromex facility in drums and other containers (collectively, the "containerized material") and in trenches and in the form of processed blocks and ground pads (collectively, the "inadequately or improperly recycled material"). Pursuant to Commission Order No. 4510-02 issued against Hydromex, the Commission considers all of this material in its current condition or status to be solid or hazardous waste subject to regulation by Subtitles D and C of the Resource Conservation and Recovery Act, 42 U.S.C. § 6901 *et seq.*, the regulations promulgated thereunder, Miss. Code Ann. § 17-17-1 *et seq.*, Miss. Code Ann. § 49-17-1 *et seq.*, and the Mississippi Hazardous Waste Management Regulations (Regulation HW-1). Hydromex has preserved the right to contest this decision by requesting a formal evidentiary hearing regarding Commission Order No. 4510-02, but Hydromex has not requested that this hearing be scheduled, because the company does not plan to reopen or continue operations at the facility. Thus, Commission Order No. 4510-02 remains in full force and effect with regard to Hydromex.¹

3. U.S. Technology now seeks permission from the Commission to conduct operations at the Hydromex facility to recycle and remove the containerized material and the inadequately or improperly recycled material located at the Hydromex facility. U.S. Technology has submitted to MDEQ and to the Mississippi Environmental Quality Permit Board (Permit Board) (as part of an

ATP
¹ U.S. Technology does not, by entering into this Agreed Order, admit or deny that the material at the Hydromex site is a solid or hazardous waste or that previous handling of the material by Hydromex has or has not met the criteria of 40 C.F.R. § 261.2(e). The Commission's view of the status of the material is set forth in this Order and more fully in the letter from MDEQ's General Counsel, Chuck D. Barlow, to Todd Anderson, Legal Counsel for the Ohio Environmental Protection Agency, dated December 23, 2002, a copy of which is attached to this Order. The recitation of facts and legal positions in this Agreed Order is not intended to bind either party as a final finding of fact or conclusion of law, but is provided for informational purposes. The parties agree and understand that the commitments to action made by U.S. Technology in this Agreed Order are binding commitments to the Commission.

application for a stormwater pollution control permit necessary for the proposed activities at the site; a comprehensive plan describing how U.S. Technology proposes to handle the containerized material and the inadequately or improperly recycled material at the Hydromex site in a manner that will render the material nonhazardous, will satisfy the provisions of 40 C.F.R. § 261.2(e) and the parallel Mississippi regulation, HW-1 Part 261, as those regulations apply to the containerized and inadequately or improperly recycled material, and will accomplish the removal of both the containerized material and the inadequately or improperly recycled material from the Hydromex facility.

4. The Commission defers to the Permit Board regarding any decision on the issuance of a storm water pollution control permit or any other permits necessary for this operation, pursuant to the authority of the Permit Board stated in Miss. Code Ann. §§ 49-17-28 and 49-17-29.

5. The Commission, however, now enters this Agreed Order and agrees with U.S. Technology that, within the context of the enforcement action begun by the Commission by the issuance of Order No. 4510-02 against Hydromex, U.S. Technology may carry out the operations described in its application for a storm water pollution control permit, attached to this Agreed Order as Exhibit 2, under the following conditions:

- A. All activities undertaken at the Hydromex facility by U.S. Technology or anyone acting on behalf of U.S. Technology (including, but not limited to, a disclosed agent, undisclosed agent, employee, or independent contractor) must conform to the operations plan submitted to MDEQ and to the Permit Board as part of U.S. Technology's storm water pollution control permit application and attached to this Agreed Order as Exhibit 2. Any deviation

from this plan must be approved in advance by the Commission and, if the deviation constitutes a deviation from permitted activities, the deviation must be approved as a modification of that permit by the Permit Board.

- B. All activities undertaken at the Hydromex facility by U.S. Technology or anyone acting on behalf of U.S. Technology (including, but not limited to, a disclosed agent, undisclosed agent, employee, or independent contractor) must comply with all federal, state, and local environmental laws and permits applicable to activities at the Hydromex facility. The treatment and/or recycling of material, including hazardous waste, if any, at the Hydromex facility in the form of the containerized or inadequately or improperly recycled material strictly as allowed in this Agreed Order will not require the issuance of a hazardous waste management permit because the activities are being taken pursuant to this Agreed Order, and duplicative permitting would, therefore, "cause undue or unreasonable hardship" to U.S. Technology pursuant to Miss. Code Ann. § 17-17-27(5). If such permitting were deemed applicable or necessary, then by this Agreed Order, U.S. Technology is granted a variance from the requirement of gaining a hazardous waste management permit for activities at the site approved by this Agreed Order for a period of one year from the date of onset of U.S. Technology's operations at the Hydromex facility. This variance may be extended for an additional period of up to one year, at the sole discretion of the Commission, upon application by U.S. Technology and after an opportunity is provided for public

comment pursuant to Miss. Code Ann. ' 17-17-27(5).

- C. U.S. Technology agrees to pay the Commission up to \$20,000 in reimbursement of costs the Commission may incur in contracting with an environmental professional to provide a Commission on-site presence and oversight at the recycling operation. U.S. Technology will be required to reimburse only actual costs invoiced to or expended by the Commission or MDEQ.
- D. Within seven days of the beginning of block production at the Hydromex facility, U.S. Technology will conduct representative sampling and analysis of the blocks produced sufficient to demonstrate that the blocks produced meet ASTM Standard C90 (strength requirements for materials used in the construction of load-bearing walls) and do not exceed RCRA land disposal restrictions for chromium of 0.60 mg/L as TCLP or for Cadmium of 0.11 mg/L as TCLP. U.S. Technology will report the results of this analysis to the Commission within five days of U.S. Technology's receipt of the analysis results, but in no case later than thirty days after the samples are collected. No blocks for which representative sampling indicates a failure of these strength standards or land disposal restrictions and conditions shall be removed from the site without additional MDEQ approval, and blocks for which representative sampling indicates a failure of land disposal restrictions must be stored and handled on site as hazardous waste and shall not be stored on or in contact with the land.

- E. Subsequent to the testing and reporting required by paragraph 5(D), above, U.S. Technology will perform one TCLP test per week on a produced block analyzed at least for chromium and for cadmium and will report the results of all such tests to the Commission within five days of U.S. Technology's receipt of the analysis results, but in no case later than thirty days after the samples are collected. No produced blocks for which representative sampling indicates a failure of the land disposal restrictions shall be removed from the site without additional MDEQ approval, and blocks for which representative sampling indicates a failure of land disposal restrictions must be stored and handled on site as hazardous waste and shall not be stored on or in contact with the land.
- F. After block production begins at the Hydromex site, U.S. Technology will submit a report to the Commission on the first day of each month stating the number of blocks produced during the previous month at the site, the number of blocks stored at the site as of the date of the report, the number of blocks moved offsite from the Hydromex facility during the previous month and the destination of those blocks, the number of blocks stored at the Hydromex facility as of the date of the report that are under contract to be delivered to a purchaser (along with the name and location of the purchaser(s) and the expected date of delivery to the purchaser), and the number of blocks stored at the facility as of the date of the report that are not under contract to be delivered to a purchaser. Nothing in this Agreed Order shall limit the

Commission's authority to issue an additional Order prohibiting the production of additional blocks until the blocks already on site at a given time are delivered to a purchaser.

6. This Agreed Order does not provide legal site access to the Hydromex facility for U.S. Technology. U.S. Technology must obtain legal site access to the Hydromex facility and the legal right to conduct these operations at the facility from all owners and, to the extent required by any lease, easement, or other property interest, from the holder of that lease, easement, or property interest, prior to commencing any activity at the site.

7. Nothing in this Agreed Order shall limit the rights of MDEQ or the Commission in the event Respondent fails to comply with this Agreed Order. The Agreed Order shall be strictly construed to apply only to those matters expressly discussed herein. This Agreed Order does not permit the acceptance of any waste or of any additional spent abrasive blasting material (whether or not categorized as a waste) by any party at the Hydromex site. The acceptance, storage, treatment, or release of any material not already located at the Hydromex site on the date of execution of this Agreed Order by the Executive Director and not allowed by this Agreed Order is prohibited.

8. Nothing contained in this Agreed Order shall limit the rights of the Commission to take enforcement or other actions against U.S. Technology or Hydromex for past, present, or future violations of environmental laws, rules, and regulations or for the creation or exacerbation of any pollution or contamination at the Hydromex facility. This Agreed Order does not constitute a settlement or compromise of any right, authority, or allegation of the Commission. This Agreed Order does not address fines, penalties, other sanctions, further removal or remedial actions or future violations of environmental laws or regulations. Nothing contained in this Agreed Order shall limit

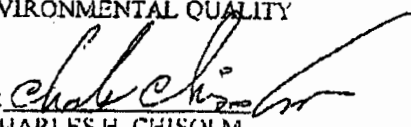
the rights of MDEQ or the Commission to take enforce .S.
Technology, Hydromex, or any other party. Likewise, nothi or
the entry into this Agreed Order, shall constitute any adm .S.
Technology, notwithstanding any other provision herein.

9. This Order does not constitute an agreement resolving any party's liability to the United States or to the State of Mississippi pursuant to 42 U.S.C. § 9613(f)(2) (CERCLA § 113(f)(2)).

10. The execution of this Agreed Order by U.S. Technology constitutes U.S. Technology's commitment to carry out and complete the removal of all containerized material and inadequately or improperly recycled material at the Hydromex site in the manner proposed in Exhibit 2 to this Agreed Order. The failure to honor that commitment, the modification of the process used at the Hydromex facility from that approved by this Agreed Order without prior approval of the Commission (including, but not limited to, a change in the ratio of cement and other binding agents to spent abrasive material to be used in the production of blocks), or any other violation of the provisions of this Agreed Order will subject U.S. Technology to penalties of up to \$25,000 per day per violation pursuant to Miss. Code Ann. § 49-17-43.

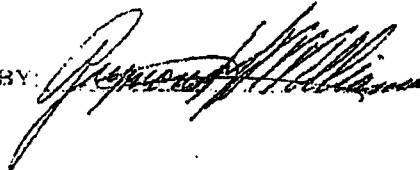
SO ORDERED, this the 18th day of July, 2003.

MISSISSIPPI COMMISSION ON
ENVIRONMENTAL QUALITY

BY: 
CHARLES H. CHISOLM
EXECUTIVE DIRECTOR
MISSISSIPPI DEPARTMENT

OF ENVIRONMENTAL QUALITY

AGREED, this the 15 day of July, 2003

BY: 

TITLE: President

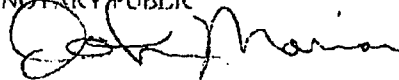
STATE OF Ohio

COUNTY OF Stark

PERSONALLY appeared before me, the undersigned authority in and for the jurisdiction aforesaid, the within named Raymond F. Williams who, first being duly sworn, did state upon his/her oath and acknowledge to me that he/she is the President of U.S. Technology Corporation and is authorized by that Corporation to sign this Agreement.

SWORN TO AND SUBSCRIBED BEFORE ME, this the 15 day of July, 2003.

NOTARY PUBLIC


mce 5/2/03

BEFORE THE MISSISSIPPI COMMISSION ON ENVIRONMENTAL QUALITY

MISSISSIPPI COMMISSION ON ENVIRONMENTAL QUALITY

4510

02

VS.

ORDER NO. _____

**Hydromex, Inc.
800 Industrial Parkway
Yazoo City, Mississippi 39194**

ORDER

The above captioned matter came before the Executive Director of the Mississippi Department of Environmental Quality ("MDEQ") this day for consideration under the authority of Miss. Code Ann. § 49-2-13(j), and the Executive Director, having received information through multiple MDEQ inspections and having determined that an administrative order should issue prior to any evidentiary hearing and without making any final adjudication of fact or law, and acting on behalf of the Mississippi Commission on Environmental Quality ("Commission"), finds as follows:

1. Hydromex, Inc. ("Hydromex") is an industrial operation located at 800 Industrial Parkway in Yazoo City, Mississippi. Hydromex receives at its Yazoo City facility a spent abrasive blast material from multiple sources. The blast material matrix includes paint and other constituents removed from aircraft and other military equipment.
2. Analysis of samples of the blast material matrix taken by MDEQ indicate that a significant portion of the material is hazardous waste as defined by the federal Resource



Conservation and Recovery Act, 42 U.S.C. § 6901 et seq., federal regulations adopted thereunder, Miss. Code Ann. § 17-17-3(m), and the Mississippi Hazardous Waste Management Regulations. The hazardous waste is not being managed in such a way as to qualify it for the exemption from the definition of "solid waste" contained in 40 C.F.R. § 261.2(e) and the parallel Mississippi regulation, and is further defined as a solid waste pursuant to 40 C.F.R. § 261.2(c)(1) and the parallel Mississippi regulation, because all or part of the waste is not being used or reused in an industrial process to make a product, is being applied to or placed on the land in a manner constituting disposal, and is being used to produce products that are applied to or placed on the land or are otherwise contained in products that are applied to or placed on the land by methods that include, but are not limited to, the placement of the waste into trenches at the facility.

3. Thus, Hydromex is operating a hazardous waste treatment, storage, and disposal facility without the permit or permits required by federal and state law.

4. Additionally and alternatively, because the waste blast material matrix is being used in a manner constituting disposal, Hydromex is creating an "unauthorized dump" in violation of Miss. Code Ann. § 17-17-17, even for that portion of the waste blast material, if any, that is not hazardous waste. The creation of an unauthorized solid waste disposal facility is declared by that statute to be a "nuisance per se, menacing public health and unlawful."

5. WHEREFORE, PREMISES CONSIDERED, the Mississippi Commission on Environmental Quality hereby ORDERS, pursuant to Miss. Code Ann. §§ 49-2-13(j), and 49-17-17(j) and (n), that Hydromex shall immediately cease and desist all acceptance, treatment, and disposal of spent abrasive blast material or any other hazardous or solid waste at its Yazoo

City, Mississippi location until further Order. Hydromex also shall not store any hazardous waste at this facility other than the waste already onsite on November 14, 2002. Additionally, any transportation of spent abrasive blast material currently at the Hydromex facility shall take place only in compliance with all applicable state and federal laws concerning the transportation of hazardous wastes, unless particular containers or discrete quantities of the waste are tested and determined to be nonhazardous, at which time those particular containers or discrete quantities may be transported in compliance with all applicable state and federal laws concerning the transportation of nonhazardous solid waste.

6. This Order does not address fines, penalties, other sanctions, further removal and/or remedial actions and/or future violations of environmental laws, rules and regulations. Nothing contained in this Order shall limit the rights of MDEQ or the Commission to take enforcement or other actions against Respondent for violations addressed herein, violations not addressed herein, fines, penalties, other sanctions, further removal and/or remedial actions and/or future violations of environmental laws, rules and regulations. The citation of violations in this Order does not necessarily constitute a complete list of violations now existing or which have existed in relation to the operation.

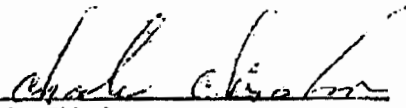
7. If aggrieved by this Order, Respondent may request a formal hearing in the manner provided by Miss. Code Ann. § 49-17-41 within thirty days of the execution of this Order. However, the request of a hearing does not postpone the actions that must be taken under this Order or relieve the Respondent from timely compliance with this Order.

8. Violation of the environmental laws and regulations of the State of Mississippi can subject Respondent to penalties up to \$25,000 per day per violation. The failure to comply

with this order will be considered a continuing violation of those laws and regulations. Knowing and willful violation of the federal Resource Conservation and Recovery Act or the regulations promulgated thereunder can subject Respondent to federal criminal sanctions including incarceration and fines.

SO ORDERED, this the 14th day of November, 2002.

Mississippi Commission On Environmental Quality

By: 
Charles Chisolm
Executive Director
Mississippi Department of Environmental Quality

BEFORE THE MISSISSIPPI COMMISSION ON ENVIRONMENTAL QUALITY

In re: Matter of
US Technology Corporation
1448 Tuscarawas St. West
Canton, OH 44702

Order No.

5611 09

The Mississippi Commission on Environmental Quality ("Commission"), the Mississippi Department of Environmental Quality ("MDEQ") and US Technology Corporation, ("UST") now enter the following agreement pursuant to the Uncontrolled Site Voluntary Evaluation Program ("Program") created in Miss. Code Ann. §17-17-54(2) (Supp. 1996), as follows:

1. UST is the former operator pursuant to an Agreed order at the former Hydromex site ("site") located at 700 South Industrial Parkway in Yazoo City, Mississippi. MDEQ has reason to believe that conditions which warrant oversight by MDEQ exist at the site. UST has transmitted information regarding these conditions in the form of final cleanup documents; dated May 27, 2009. *former operator ✓*

2. The site is an uncontrolled site within the purview of Miss. Code Ann. §17-17-54. UST desires to submit this site for participation in the Program. By this agreement, MDEQ accepts the site for participation in the Program.

3. UST agrees to the following terms and conditions of participation in the Program:

- (a) UST will pay all costs of MDEQ's actions associated with MDEQ's administration and evaluation of the site. For the first twelve months in which this Agreed Order is effective, these costs will be calculated at the rate of \$100.00 per hour for each hour of MDEQ staff or subcontractor time spent reviewing, assessing, investigating, reporting on, taking administrative action in regard to, analyzing or studying the site or the information and plans regarding the site submitted by UST, plus MDEQ's actual costs (above and beyond staff/subcontractor time) for obtaining and analyzing split samples and additional samples deemed necessary by MDEQ. Analytical costs will be charged as shown on the relevant schedule of analytical costs, found in Section 9 of this order. MDEQ reserves the right to increase or decrease the per-hour and analytical cost schedule at any time after the first twelve months in which this Agreed Order is effective. In case of such an increase or decrease, MDEQ will notify UST in writing of the new cost schedule, and the new cost schedule will become effective forty-five

EXHIBIT

B

US Technology Corporation Agreed Order
Page No. 2

days after the date of the written notice to UST. If UST determines to discontinue its participation in the Program for the site after a change by MDEQ in the per-hour and analytical cost schedule, UST may terminate its participation in the program as is stated in paragraph 8, below.

- (b) MDEQ will send an invoice to UST on a monthly basis stating the program costs assigned to the site that have not been paid prior to the date of invoice by UST, and UST will pay that amount to MDEQ, for deposit into the Uncontrolled Site Evaluation Trust Fund ("Fund"), within 30 days following the invoice date.
- (c) UST will be liable for the payment of all invoiced amounts described in subparagraph 3(b), above.

4. MDEQ will expedite review and evaluation of the investigative assessments, work plans, remedial investigation plans, scopes of work, and remediation design plans submitted by UST regarding the site.

5. This agreement is not entered in lieu of any penalty or enforcement action that MDEQ or the Commission may otherwise take in regard to the site or against UST. MDEQ and the Commission reserve the right to take any and all administrative and/or legal actions they deem necessary in regard to the site and/or against UST. This agreement does not represent the settlement or release of any liability of UST for any action, inaction or property condition. UST neither admits nor denies liability regarding the environmental condition of the site. MDEQ accepts no responsibility by entering this agreement for activity taken at the site or for the past, present or future condition of or contamination present at the site.

6. If any part of any amount invoiced to UST by MDEQ under this agreement is not paid within thirty days after the due date (sixty days after the date of the invoice), a penalty of up to twenty-five percent of the amount due may be imposed by further order of the Commission and added thereto pursuant to Miss. Code Ann. §17-17-54(4). If MDEQ is required to pursue legal action to collect fees incurred, reasonable attorneys' fees and costs may be assessed against the nonpaying party.

7. MDEQ may suspend immediately any activities or actions related to the administration or evaluation of the uncontrolled site or sites that are the subject of this agreement if UST fails to meet any condition or requirement of or violates any of the following: (1) This agreed order or any other order of the Commission pertaining to the site to be evaluated pursuant to this Agreed Order; (2) Miss. Code Ann. §17-17-54 (Supp. 1996); (3) any rule or regulation promulgated by the

Commission, or (4) any permit issued by the Mississippi Environmental Quality Permit Board.

8. Either UST or MDEQ may terminate this agreement upon thirty days prior written notice to the other party. The effective date of the termination will be the thirtieth day after receipt by either party of a written notification of termination. Within thirty days of the effective date of termination, MDEQ will deliver to UST an invoice for all work accomplished prior to the effective date of termination for which UST previously has not remitted payment. UST will pay the invoice amount to MDEQ, for deposit into the Uncontrolled Site Evaluation Trust Fund ("Fund"), within 30 days following the invoice date. As of the effective date of termination, MDEQ will cease the expedited review of the site, and MDEQ thereafter will determine whether and when to resume review of site information within the normal time frame of the MDEQ uncontrolled sites program.

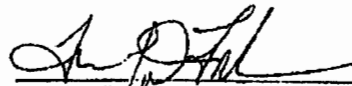
9. Schedule of Analytical Costs

Analytical Parameters	Price per Sample
Heavy Metals - Full Scan	\$ 350
Heavy Metals - Individual	\$ 40
Volatile Organic Compounds	\$ 225
BTEX	\$ 60
Semi-Volatile Organic Compounds	\$ 450
PAHs	\$ 150
Pesticides	\$ 275
Herbicides	\$ 275
Dioxins	\$ 1000
PCBs	\$ 125
TCLP Metals	\$ 260
TCLP VOCs	\$ 175
TCLP SVOCs	\$ 340
TCLP Pesticides	\$ 140
TCLP Herbicides	\$ 150
TPH-GRO	\$ 90
TPH-DRO	\$ 125
COMPOUNDS - NOT LISTED	**

** For those compounds that are not listed, the price will be negotiated on a site-specific basis.

US Technology Corporation Agreed Order
Page No. 4

SO AGREED AND ORDERED, this the 23 day of July,
2009.


Trudy Fisher
Executive Director
Mississippi Commission on
Environmental Quality

AGREED, this the 9th day of July, 2009.

BY: 

TITLE: Raymond Williams, President
US Technology Corporation

STATE OF OHIO

COUNTY OF STARKE



PERSONALLY appeared before me, the undersigned authority in and for the
jurisdiction aforesaid, the within named Raymond Williams who first being
duly sworn, did state upon his/her oath and acknowledge to me that he/she is the
President of US Technology Corporation and is authorized by that Corporation
to sign this Agreement and to enter this Agreement on behalf of US Technology.

SWORN TO AND SUBSCRIBED BEFORE ME, this the 9th day of
July, 2009.

MY COMMISSION EXPIRES:

July 28, 2013

NOTARY PUBLIC



JILL L. ALDRIDGE
Notary Public, State of Ohio
My Commission Expires 7/28/2013

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-308 DB

CODE: (SP)

DATE: 09/13/2011

SUBJECT: Portland Cement Treated Courses

Section 308, Portland Cement Treated Courses, of the 2004 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows:

907-308.02.4—Curing Seals. After "FA-1," in the first sentence of Subsection 308.02.4 on page 204, add "AE-P,".

907-308.02.5—Soil-Cement Design. Delete in toto and substitute the following:

The design of soil-cement courses shall be performed by the Contractor's Laboratory and reviewed by MDOT's Central Laboratory. At least 21 days prior to the proposed use of a cement course, the Contractor shall make available materials proposed for use in the mixture for sampling and testing by MDOT as the Engineer may consider necessary for the verification of a mix design.

907-308.03.2—Equipment.

907-308.03.2.1--General. Delete the second paragraph of Subsection 308.03.2.1 on page 206.

Delete Subsection 308.03.7.2 on page 209 and substitute the following:

907-308.03.7.2--Weather Limitations. No cement or cement treated material shall be applied or placed when the temperature is below 45°F nor when the Engineer determines, based on the latest information available from the National Weather Service, that the forecast temperature will fall below 45°F within the next five (5) days in the area in which the Project is located. No cement or cement treated material shall be placed on a frozen foundation or mixed with frozen material.

907-308.03.9.2--Density. Delete the second paragraph of Subsection 308.03.9.2 on page 213 and substitute the following:

Soil Cement Treatment of Subgrade. The lot will be divided into five (5) approximately equal sublots with one (1) density test taken at random in each subplot. The average of the five (5) density tests shall equal or exceed 96.0% with no single density test below 94.0%. Sublots with a density below 94.0% shall be corrected and retested for acceptance.

Each lot of work found not to meet the density requirement of 96.0% of maximum density shall be evaluated by the Lead Design Engineer for suitability.

January 21, 2013



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Project No. DB/STP-0029-03(009) / 102556-304000

Soil Cement Treatment of Base. The lot will be divided into five (5) approximately equal sublots with one (1) density test taken at random in each subplot. The average of the five (5) density tests shall equal or exceed 97.0% with no single density test below 95.0%. Sublots with a density below 95.0% shall be corrected and retested for acceptance.

Each lot of work found not to meet the density requirement of 97.0% of maximum density shall be evaluated by the Lead Design Engineer for suitability.

Soil Cement Treatment of Irregular Areas. Density of irregular areas shall be rolled to highest stability. Irregular areas shall be defined as preleveling, wedging [less than 50% of width greater than minimum lift thickness], ramp pads, irregular shoulder areas, median crossovers, turnouts, and other areas where an established rolling pattern cannot be obtained.

907-308.03.10--Protection and Curing. Delete the second paragraph of Subsection 308.03.10 on page 213 and substitute the following:

When the treated course is the subgrade, a subsequent course shall not be placed on the sealed course for at least seven (7) calendar days. During this seven (7)-day period, the treated course shall not be subjected to any type of traffic and equipment.

When the treated course is the base, the Contractor shall use the mix design (seven (7)-day or 14-day) as specified on the Mix Design. Depending on the specified mix design, a subsequent course shall not be placed on the sealed course for at least seven (7) or 14 calendar days. During this period, the treated course shall not be subjected to any type of traffic and equipment.

Delete Subsections 308.04 and 308.05 on pages 214 and 215 and substitute the following:

907-308.04--Blank.

907-308.05--Blank.

**Mississippi
Standard Specifications
For
Road And Bridge
Construction**

No. _____



**Approved and Adopted
By**

**The Mississippi
Transportation Commission
Jackson**

February 24, 2004

